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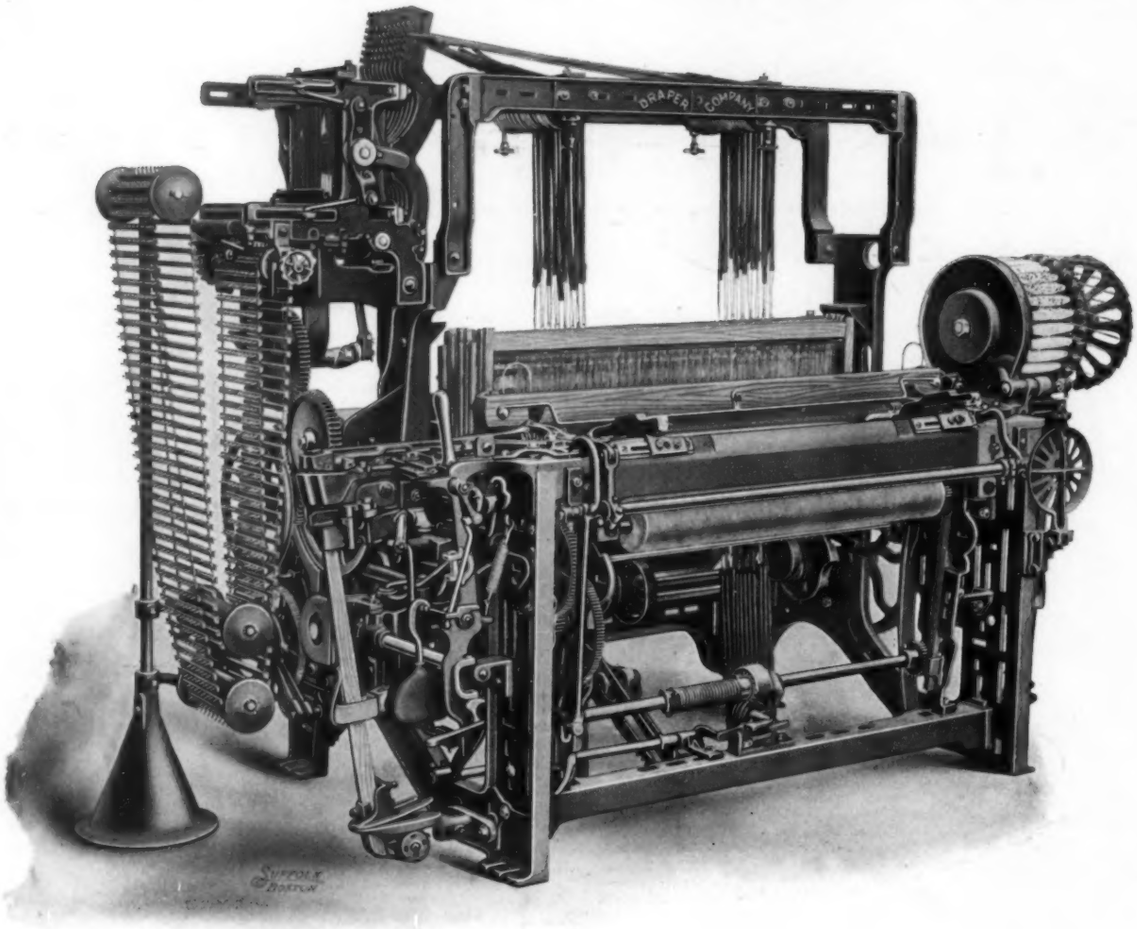

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FUTURE OF COTTON MANUFACTURING IN THE SOUTH.

It has taken the Southern States but a little over eight years to prove to the entire satisfaction of competent observers and students of the textile industry that the manufacture of the coarse counts of cotton yarns and fabrics is destined to be centralized below the Mason and Dixon line. In the last eight years, the group of States located in the cotton-growing belt has made tremendous strides towards the gaining and maintenance of the industrial supremacy of the coarser grades of cotton yarns and fabrics; and men well posted in textile matters are frank to admit that the path of the least resistance for Northern manufacturers is the fine goods market.

In the year 1909, the South added 932,320 spindles and 19,237 looms calling for an investment of over $23,000,000. These figures are astounding to one who has not visited the South and investigated conditions as they exist. The 1909 figures given above will not be as staggering after one has made a tour of Georgia or any other Southern textile manufacturing State. The fact is, New Englanders and those located outside of the cotton manufacturing States of the North and West have no conception of the marvelous industrial and commercial growth of the South since 1900, when the conception of this great movement of expansion and progress occurred. The census of 1900 set the Southerner to thinking; industrial economy has done the rest. Everywhere one sees activity, either industrial or agricultural, with enthusiasm and confidence clinching every nail of physical and administrative effort. It is an awakening that can be compared with New England after the Boston Tea Party and Revolutionary War; with the Western States a quarter of a century ago; and with England after the Napoleonic wars.

In considering the question of the future of cotton manufacturing in the South, perhaps the most important factor is the natural advantages enjoyed by the industry. Notwithstanding the many contradictions, we firmly believe that there is a theoretical as well as practical advantage of a location in the middle of a cotton field, even if the mill does not use the grade that is grown in that section. The cost of transportation is not the important factor. The great advantages are the physical opportunity to gauge the crop and to get your staple before it becomes a speculative commodity. These are distinct advantages that the Southern mill on coarse goods has over its competitor in the North. As an illustration, five mills located in and near Augusta, Ga., purchased their requirements of cotton in the Augusta market, and every bale was raised in that immediate section and did not have to be transported by railroads. These mills, by a community of interest arrangement, purchased their cotton in one transaction last Fall before prices went skyward. The crop in that section was considered below normal by the representatives of these mills that entered

into the agreement, and as a result of the combined opinions, the cotton was purchased "right."

In other large manufacturing sections of the South, similar transactions were told of that indicated the practical advantage of a location in the cotton belt for coarse count manufacturers and spinners. The question of arbitration of grades is serious and costly when taken in the aggregate. There is less liability of this in the cotton-growing districts when the bales are carted direct from the ginnery to the mill warehouse. Brokers freely admit that their Northern trade is less profitable than the Southern on account of this issue.

The New Orleans Cotton Exchange reports that for one year, Southern mills have consumed 2,560,000 bales of cotton, or 60,000 bales more than were consumed by Northern mills. In the same period we exported 8,000,000 bales and imported $10,000,000 of cotton fabrics that could have been manufactured in this country at a profit. In 1892, the New England States had 74 per cent. of all the cotton spindles in this country; to-day, New England has a fraction under 55 per cent. Within a radius of ten miles of the city of Manchester, England, there are more spindles than in the United States.

For the manufacture of coarse and medium coarse goods the climatic conditions of the Southern States are ideal. There is less demand for artificial humidifiers and other systems of modifying climatic conditions in many sections of the South than in certain sections of New England. There is an abundance of moisture in all seasons except the dry periods, and as coarse goods do not require the uniform humidity that is essential for the success of fabrics of fine and medium fine counts, the dry periods are not a serious consideration. The State of Georgia has seven of the ten zones of weather or climate in this country.

The manufacture of cotton is an exacting science. To card the fluffy fibers of cotton from the tangled condition of raw material to the parallel and uniform layers of roving, to twist this fragile cord into the strong and even yarns, true to weight and number, and finally to weave into the smooth texture of cloth of exactly the right weight, requires power and energy that must be developed by a well regulated and perfectly adjusted engine or water wheel. Mill engineers are in concord in the opinion that the evolution of cotton mill machinery has been largely due to the fact that in the early days of the industry water power was the energy employed, and as the flow of power was so constant and well regulated, intricate and delicate machinery evolved from the original types.

The cost of power is rarely over 5 per cent. of the total cost of the product of the mill, and yet it is an important consideration and has its influence in the consideration of this subject. In four years, the Southern Power Company, a $10,000,000 corporation, has developed nearly 100,000 H.P. of electricity, and serves the great manufacturing and industrial territory extending for 200 miles over the western section of the Carolinas. This section is commonly described as the "Cotton Mill District of the South," as it includes over 400 mills with an equipment of 5,500,000 spindles and 120,000 looms. This corporation already supplies power to over 130 mills, which operate close to 2,000,000 spindles and 32,000 looms. These facts illustrate another advantage for cotton manufacture in the two Carolina States where this power company is developing and extending its services rapidly. There are a number of other large power companies in the South, including one at Columbus, Ga., where over 200,000 H.P. will be available in the year 1911, and a smaller development in Virginia. There is more undeveloped power in the Southern States to-day than in the New England and middle Atlantic States combined, so states a prominent engineer.

Virtually the only serious handicap to cotton manufacturing in the South is the labor question. When mills were first established in the Carolinas they were almost overwhelmed with applicants for work by a willing and intelligent class of labor; but now practically all of the available labor is employed and immigration must be resorted to. The increased profitableness of agriculture has tended to draw men from industrial pursuits back to the farm, and the increase of other lines of industry in the South has also influenced this question quite seriously. Skilled labor is difficult to obtain. In New England mills have at their disposal labor possessed of a skill inherited and acquired through 60 years or more of experience in the industry. This superiority of labor has also made possible the perfection of organization in New England mills, which is so large an element in their success, and which has probably reached its highest point of perfection in New Bedford, Mass.

Immigration to the industrial centers of the South is imperative. There is already an organization perfected to attract industrious, thrifty and law-abiding immigrants from other parts of the United States and from foreign countries. The South should profit by the experience of Northern manufacturers who have been experimenting for about two years with Syrians, Turks and Greeks, and have found them excellent mill operatives, law-abiding, good citizenship material and well above the average immigrant in intelligence. These immigrants come from countries that enjoy climatic conditions similar to Georgia and South Carolina, so that the natural climatic conditions and agricultural advantages of the South would be a strong factor in diverting immigration of this character at the port of entry to this country to the Southern States instead of to the grain fields of the West and industrial pursuits of the East.

An analysis of the industrial growth of a particular section of this country will show that labor invariably follows industry, and I am confident that the development in the South will be no exception. Systematic efforts should be made at once to attract desirable immigration. The railroads should lead the movement and the manufacturers of the South should add their hearty co-operation. The preliminary census returns show that the State of Georgia increased in population 17 per cent. over 1900, as compared with 14 per cent. in Massachusetts; Alabama increased 17½ per cent. as compared with 4.8 per cent. in Maine and 8.5 per cent. in New Hampshire; North Carolina increased 13.6 per cent. over 1900 and South Carolina 14.1 per cent. Florida showed a growth of 32 per cent. over 1900, while Mississippi increased 17 per cent. Texas enlarged its population by 26 per cent. These figures show that immigration has started southward, and with immigration running over 1,000,000 for this year, the South should divert a greater share than ever before. As the world's population is growing at the rate of 25,000,000 per annum and there are at the present time over 450,000,000 people in Europe, the Southern States will not long be handicapped by the lack of labor.

The financing of the industrial growth imminent in the

South is assured. For many years Northern capital by the millions has been pouring into the States south of the Mason and Dixon line, but only for three or four years has the individual investor and the banking house sought Southern sources of investing funds for more satisfactory returns than could be secured at home. The New England and middle Atlantic groups of States represent the major part of the investing wealth of this country, and it is from these States that financial backing is gradually but permanently being directed toward the South for profitable and safe investment. The textile industry as a solid, fundamental investment is undisputed. The investment return averages considerably more than railroad and industrial stocks with a security of principal equal to first mortgage bonds.

Stocks of Southern cotton mills pay the investor a better return on the money invested than Northern cotton mill shares. The older cotton mill corporations in New England such as Bates Mfg. Co., Amoskeag Mfg. Co., Pepperell Mills and Androscoggin Mills sell at three times the par value or on an income return of barely 4 per cent. to the investor. It is not difficult to buy absolutely safe Southern cotton mill shares that will net 6 and 7 per cent. to the investor, and with a wide margin of equity back of every share of stock. New England and New York investors are just beginning to appreciate the anomaly suggested above and are buying large blocks of such shares through Southern brokers.

Directly associated with the progress of the cotton industry in the South, is the development of the manufacturing of cotton goods into other commodities—or the secondary manufacturing of fabrics. There are a number of clothing makers in the South doing a large and prosperous business; but there are vast opportunities for further investment in this line. Among other secondary products that could be profitably manufactured are coal and feed baskets which are made from heavy cotton duck. There are five large concerns making this line in the North and every one is successful. The South imports all of its coal and feed bags. Overalls should be made in the South. This industry uses thousands and thousands of bales of drills and twills from 2.50 per yard up to 3.50, and as population increases so will this industry increase in direct ratio. Linings for heavy army and navy uniforms are made of Southern ducks in New York factories, also heavy frontier uniforms and overcoats for the British Northwest consume about 20,000,000 yards of cotton duck. More textile machinery should be manufactured in the Southern States; and so one might enumerate scores and scores of secondary industries that properly belong to the Southern field.

The finishing of the manufactured fabrics is now done almost entirely in the Northern States; but with the increased production and the development of secondary industries there will have to be more finishing done in the cotton States. Dyeing, finishing and printing plants will be generally established in the mill centers of this section before many years. The cotton goods industry in this country is only in its infancy, and no one can doubt that the next decade will see a large and broad development of cotton manufacturing. New England will maintain its fine goods supremacy for some time to come; but the South will encroach upon this department of the industry after gaining the supremacy of the coarse and medium counts of yarns and fabrics.

W. IRVING BULLARD.

SOUTHERN TEXTILE ASSOCIATION.

The Southern Textile Association, composed principally of superintendents and overseers of the Southern cotton mills, will hold its next meeting in Augusta, Ga., on Saturday, July 2nd. A local committee has been formed, consisting of Superintendents Arthur T. Smith, of Langley Mill; A. H. McCarrel, of the Akin Mfg. Co., Bath, S. C.; C. M. Harrington, of the King Mill; S. B. Pratt, of the Sibley Mill, and G. T. Lynch, of the Enterprise Mill. The committee has arranged to have the meeting at Lakewood Park, a beautiful pleasure resort, easily reached by trolley lines where the sessions may be held in the open air or under cover, according to the weather. The program, as outlined by the committee, is as follows:

12 M.—Meeting called to order.

1 P. M.—Adjourn for barbecue dinner.

2:30 P. M.—Re-assemble for the reading of papers, discussions, etc.

4 P. M.—Adjournment for trolley ride, etc.

EVENING MEETING.

8 P. M.—Assemble at Chamber of Commerce for the completion of any unfinished business, to be followed by a smoker, light refreshments and speeches.

The growth of the association in membership has been remarkable, and its place in the industry in the South is established. The eligibility rules for membership in the association are as follows:

Section 20. Persons eligible for active membership shall be qualified superintendents, assistant superintendents, overseers of the various departments, master mechanics, chief engineers, electricians, representatives of textile papers and instructors in textile schools.

Sec. 21 provides for the issuance certificates for "associate members" who may be entitled to be present at all social meetings but not at business meetings. It may be explained that this was intended to open the doors to the manufacturers and salesmen of mill machinery and supplies, and any others who are sufficiently interested to attend and tender their membership fee.

MEDAL AWARDED.

The Textile Department of the A. & M. College of North Carolina, has again been awarded one of the student's medals by the National Association of Cotton Manufacturers. This medal is given for the encouragement of textile education and is presented to the most proficient student taking the four year textile course. This is the third consecutive year that the A. & M. College Textile School has received this medal and is the only textile school in the South to receive it. The medal was presented to the successful student at the graduating exercises which were held on May 31.

According to Consul Stuart K. Lupton, of Karachi, India, the deputy director of agriculture in Sind states that American cotton seed was tried in several places in that district of India last season with good results. The average yield is 575 to 660 pounds per acre, rather more than the indigenous cotton, while the staple is at least half an inch longer. It is supposed that cultivation will be extended next year, as it can be sown in June, the best time of the year from the standpoint of irrigation, and ripens much quicker than native cotton.

American Cotton Manufacturers' Association.

CONVENTION AT CHARLOTTE, N. C., HAD RECORD ATTENDANCE—PRESIDENT PARKER DELIVERED NOTABLE ADDRESS—D. Y. COOPER ELECTED PRESIDENT.

The 14th annual convention of the American Cotton Manufactures' Association was held at Charlotte, N. C., May 17-18 in the Academy of Music. That the selection of Charlotte, N. C., for holding the convention this year met with popular approval, was evidenced by the large attendance of members and visitors, there being over 500 members and 300 visitors registered at the office of the Secretary during the two days of the convention. Charlotte is the center of the textile industry in North Carolina, and is also the Southern headquarters for a large number of prominent textile machinery manufacturers of the East. An atmosphere of seriousness pervaded the meetings, and close attention was given to the able addresses and discussions. President Parker's annual address may truly be styled an inspiration, and it became the subject of much informal discussion during the meeting. The fact that Charlotte is the home of the American Cotton Manufacturers' Association probably added to the enthusiasm of the local committee headed by Chairman R. M. Miller, Jr., and the conveniences of the entire city were turned over to the Association for the pleasure of the members and visitors. Quite a few members arrived on the evening previous to the convention, but the vast majority poured into the city from early in the morning on Tuesday of the convention until 12 o'clock. The Hotel Selywn was the natural rendezvous for the members and friends previous to the sessions in the Academy, which gave a splendid opportunity for renewing acquaintances and meeting new members and friends. The board of governors held a meeting in the hotel on Monday evening.

D. Y. COOPER, NEWLY ELECTED PRESIDENT.

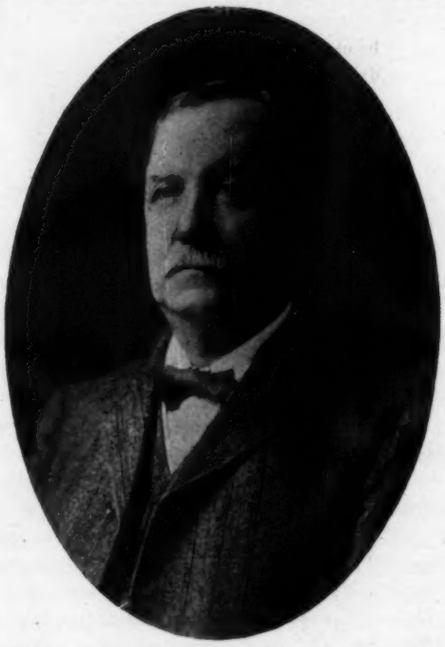
Owing to the fact that the train from the North bringing a great many members did not arrive until after 10 o'clock in the morning, the opening of the first session was delayed until 11 o'clock. When President Parker called for order, the auditorium was comfortably filled. Rev. Harris Mallinckrodt, Rector of St. Peter's Episcopal Church, offered a prayer, which was followed by the address of welcome to the City by Honorable T. W. Hawkins, Mayor of Charlotte. T. H. Rennie, president Pell City Cotton Mills, Pell City, Ala., responded to the address of welcome in behalf of the Association. President Parker then delivered his annual address, which was considered a masterpiece by all who had the privilege of hearing him. Mr. Parker was so imbued with his convictions that the rules of the New York Cotton Exchange required urgent attention in order to give the legitimate buyer of cotton equal rights with the seller, that it was an easy matter to rouse the enthusiasm of his audience, who gave their approval in an unmistakable manner.

The stage of the Academy was ingeniously decorated to combine the three facts that the convention was held in the State of North Carolina whose symbol is the hornet's nest, that the Association is country-wide as evidenced by the presence of the American flags in the decoration, and that the great business of the Association was cotton manufacturing as symbolized by the two large bales of cotton draped with ginghams from the loom and yarn from the spindle.

Immediately following the president's address, Ridley Watts, of Grinnell Willis & Co., New York City, and a member of the board of governors, made a short speech in behalf of the Association expressing its appreciation of the services of President Parker, and presenting him with a gold medal as token of esteem. President Parker then announced the social features of the day. On account of the limited time before adjournment, President Parker announced that he had asked John A. Law, president of Saxon Mills, Spartanburg, S. C., to deliver his address on "Excess Tare on Cotton" instead of "Warehousing Cotton in the South" by L. H. Bullard, Gulf Compress Co., Memphis, Tenn., as Mr. Bullard's address was somewhat longer and would require considerable discussion, and could better be taken up at the afternoon session. Mr. Law then delivered his address, in which mention was made that a recent law in South Carolina allowed the ginner to use 6 per cent. or 30 pounds of tare per bale. Mr. Law mentioned that it was the opinion of several prominent manufacturers of the State that the law would be proved unconstitutional.

In the discussion which followed this address, T. H. Rennie, Pell City, Ala., stated for the last twenty years he has been in close touch with cotton buying and the question of tare figured very largely in the waste account, and he had found that the buyer had no control over the percentage of the tare, which in many cases would knock off a great deal of the profit that should have gone to the mill. He stated that for the past few years he had been acquiring cotton in a certain locality cheaper than in other sections, and upon examination into the cause of this discrepancy he found that 10 pounds of patches were added to the bales in the locality in which they were cheaper, which was of course the reason for the lower price. Mr. Rennie figured out that with the 10 pounds of patches and 3 pounds of franchise that the mill lost $1.80 per bale.

Continuing, Mr. Rennie said: "I don't know why the law says that there should be 6 per cent. of cover on a bale of cotton. I am satisfied that the new South Carolina law will not stand in court. The cotton manufacturers will have to do as the iron manufacturers did in Alabama. When Governor Comer notified one of the principal steel companies in Birmingham that he intended to introduce a bill that for every dollar which was sent out of the State in dividends the companies would have to spend two dollars in the State, he was informed by a representative of the steel interests that he could introduce any bills he pleased, but that the moment any such measure was passed all the iron mills in the State would stop. As a consequence no such legislation was ever introduced. The cotton manufacturer has a similar remedy at hand if he chooses to adopt it.



ELLISON A. SMYTH, NEWLY ELECTED VICE-PRESIDENT.

Mr. Rennie referred to the excellent manner in which Egyptian cotton was baled and compared it with the careless method employed on Southern cotton. He further stated one of the worst evils was the selling of the old bagging from the bales back to the farmers, as the bagging was necessarily in a bad condition and necessitated patches, which of course added weight. He said he would like to have the Association embody in a resolution just how the cotton should be baled and what per cent. of tare would be acceptable, also what premium would be paid to have the bales in better shape. He pointed out that it would be better for the farmer, better for the manufacturer and for the transportation company.

A. H. Lowe, former president of the Association and treasurer of the Parkhill Mfg. Co., Fitchburg, Mass., then discussed the question of excess tare, and stated that as a buyer and a manufacturer he was surprised that we suffer as little as we do, but that we should not suffer at all. He stated that the farmer and the manufacturer should have equal justice in the matter of baling and the amount of tare. He made the point that cotton at 15 cents was the worst baled material of any other commodity known of equal value. He stated that paper worth two cents a pound was boxed as carefully as the finished goods from the cotton mills, and that he wished that the manufacturer had the influence to show the farmer the advantage of proper baling. The members of the Arkwright Club, a textile organization, allow 24 pounds tare, as do others in New England. The excess tare, according to Mr. Lowe, was generally found in compressed bales. He mentioned the fact that he had a photograph of a bale containing 65 pounds of tare. In justice to the farmer he stated that he had sampled, weighed and stripped bales for many years, and he had had small claims for excess tare. He believed that cotton could be covered properly with 22 pounds of bagging and ties, and that all the manufacturer wants is honest weight of cotton and honest weight of tare.

W. A. Giles, superintendent of Graniteville (S. C.) Mills, in discussing the same question said that he thought the South Carolina law relative to the tare on cotton bales would not stand when put to the test. Mr. Giles stated that there is not as much loss due to excess tare, as there was to injury to the bale owing to the careless method of baling the cotton. He also made the point that the mills are responsible to a certain extent by selling the tare back to the farmers. He mentioned that during the year he had seen many hundreds of bales lying on the ground exposed to the weather, and stated that he thought a bonus should be allowed sellers for housed cotton, as the moisture absorbed by the cotton is very unprofitable for the mill.

Mr. Rennie again took the floor on the subject and stated that of a 750-bale lot he found that 275 were "flat" cotton with 24¼ pounds tare to the bale while the 475 bales were compressed, and the average tare was 41 pounds per bale. The meeting then adjourned until 2:30 P. M.

TUESDAY AFTERNOON'S SESSION.

At the afternoon session, L. H. Bullard, Gulf Compress Co., Memphis, Tenn., read a paper on "Warehousing Cotton in the South." In the discussion which followed, A. H. Hammond, Greenville, S. C., urged the necessity of adopting some special plan to keep cotton from being sent to New York and then having to be shipped back for use in the mills. Mr. Hammond stated that if these warehouses have proper backing and their solvency is assured, good loans could be obtained on the warehoused cotton as loans of this character are in demand.

W. E. Beattie, president and treasurer of Piedmont Mfg. Co., Greenville, S. C., in discussing the subject stated that the system of warehousing cotton in the South would be very beneficial to all parties concerned, and he believed that under proper management and with the assurance of the solvency of warehouses, that cotton could be readily certified, being properly graded at the warehouse, and accurate accounts kept.

Thos. R. Dawley, Jr., former special agent, Bureau of Labor, Washington, D. C., then delivered an address on the "Mountain Problem," graphically picturing the abject poverty and illiteracy among the isolated mountaineers.

Spencer J. Steinmetz, of the C. & O. Coal Agency, Boston, Mass., was then introduced by President Parker, and spoke very interestingly on foreign trade. He said that the Mexican trade and that of Latin America could be secured for American cotton products if proper steps were taken. "One of the principal requisites," said Mr. Steinmetz, "is that agents should know Spanish." He was in favor of every one learning to speak it. He said the art of salesmanship differed in different countries, and the characteristics of the people should be studied. For instance, in China the language is written in characters, and while

GROUP OF MEMBERS AND VISITORS AT THE CONVENTION OF THE AMERICAN COTTON MANUFACTURERS' ASSOCIATION, CHARLOTTE, N. C., MAY 17-18, 1910.

in the different provinces of China the people speak different dialects, the Chinese characters numbering over 300 are the same throughout the Empire. Mr. Steinmetz drew some Chinese characters on paper and exhibited them to the audience to illustrate some of the simple characters. From this he said it could easily be seen that trade marks played an important part in the selling of goods. Mr. Steinmetz said that the English, German and Japanese have made a special study of foreign salesmanship and as a result they were outstripping the American salesman. The love of a people for pictures is very strong in the Russian country, where Mr. Steinmetz said there were some very fine mills, on the walls of which were beautiful pictures which were works of art.

In the absence of H. R. Beane, president Peter Hill Co., Atlanta, Ga., who was to have delivered an address on "The Development of the Cutting-up Trade in the South," President Parker said that the paper would not be read at the meeting, but urged all of the members to read the address as it appeared in pamphlet form, copies of which were distributed. The report of the Sales Note committee was postponed until Wednesday, after which the meeting adjourned for the day.

The following committees were announced before adjournment: Resolution committee, J. W. Cannon, William E. Hooper and L. L. Lampton; committee on suggested distribution of Thos. R. Dawley's article on "Child Labor in the South" which appeared in the May issue of COTTON, R. M. Miller, Jr., Robert Chapman and Scott Maxwell; committee on president's address and recommendations, W. E. Beattie, Arthur H. Lowe, Fuller E. Calloway, J. L. Patterson and W. H. Harris; committee on excess tare and cotton warehouses, John A. Law, John W. Fries, Lawrence McRae and David Jennings.

From 4 P. M. to 6 P. M. a reception to the visiting ladies at the convention was given at the residence of Mrs. R. M. Miller, Jr., Mrs. Stonewall Jackson being the guest of honor. Many of the members attended the baseball game in the afternoon, and in the evening some attended wrestling match, and others visited the auditorium to see the commencement exercises of the city graded schools. At 9 o'clock a dance was held at Lakewood Park.

WEDNESDAY SESSION.

The session on Wednesday morning May 18th was called to order shortly after 10 o'clock by President Parker who announced the social features for the day which included automobile and carriage drives for the visiting ladies at 10:30, and a reception at the residence of Mrs. Stuart W. Cramer. President Parker announced that a barbecue and dance would be held at Lakewood Park at 2:00 o'clock and professional baseball at 4:00.

President Parker as chairman of the Uniform Sales Contract Committee then delivered his report, emphasizing the necessity for the adoption by buyers and sellers of such a contract as the means of avoiding cancellation of contracts on technicalities when the market is against one or the other. Mr. Parker stated that many conferences had been held with buyers, and that they were agreeable to the contract, but insisted that the width, weight and count of the goods must be right. Mr. Parker believed that they were right in their contention and to illustrate said that the warp count should be such that the number of threads in the warp would be equal to the width multiplied by the threads per inch, plus a reasonable number of threads for selvage, the latter being left to the discretion of the manufacturer.

The contracts would read that after goods are manufactured they would be at the risk of the buyer. He further stated that at the present time the default on one delivery was some times sufficient ground for the buyer to cancel the whole contract, not not only what was to be delivered but what had actually been delivered on the contract. As to the

CHAS. K. OLIVER, CHAIRMAN BOARD OF GOVERNORS.

percentage of variation in the weight of the goods, Mr. Parker said it had not been determined by the committee, but investigations along practical lines were being made, and he thought that a one per cent. variation on goods of four yards and over would be about right with about one-half per cent. variation allowable on goods heavier than four yards. Mr. Parker asked to have the report received by the convention as information and that the committee be continued through the year. This disposition was made upon motion by A. H. Lowe, Fitchburg, Mass. The written report as submitted by President Parker is printed in another column.

The only address of the day then followed, being delivered by J. S. Burrows, Fuel Expert, Castner, Curran & Bullitt, Norfolk, Va., on "Economic Coal and its Use in the Cotton Mill."

In the discussion of general topics, Fred. T. Craig, representing the Chas. J. Tagliabue Mfg. Co., New York City, read an interesting paper on "Temperature and Application of Instruments for Cotton Mills." Mr. Craig emphasized the importance of using accurate and reliable thermometers in the cotton mill in the different departments. He wanted to know if any of those present knew the temperature of their size boxes on the slashers. He said that he had seen them vary 20, 30, and 40 degrees, when as a matter of fact the temperature should be approximately uniform in order to get uniform sizing. The subject of dryers was then discussed briefly, the point being made that the evaporating of water cost money, and that proper temperatures should be used. Mr. Craig urged the use of automatic regulating thermometers, in the dye house. He said that most of the dyers use cheap thermometers, the glass of which expands unequally, and they soon become inaccurate. The specific gravity of a liquid which varies with the temperature, thus could not be accurately found with cheap thermometers. The use of a thermometer in the boiler room was also discussed. Mr. Craig explained the method of making high grade thermometers, saying that the glass tubes were stored for 6 months and then graduated properly.

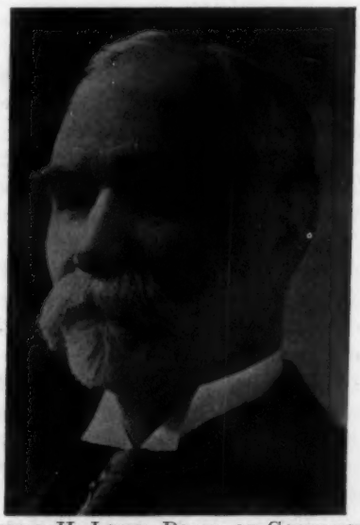
The reports of the different committees appointed by the president then occupied the attention of the convention. W. E. Beattie, Greenville, S. C., chairman of the Committee on the president's address on gin compression reported on the latter as follows:

"Whereas: It is a well established fact that the present method of baling American cotton is both wasteful and extravagant, causing unnecessary losses and vexatious annoyances to all the departments of the cotton industry and,

"Whereas: The spinners of the world have for several years pleaded for reforms in baling American cotton through the medium of gin house compression of the square bale type and,

"Whereas: It now appears that machinery has been invented which will make gin-house compression feasible and practicable in the preparation of the American bale for market upon the most economic basis, not only giving the density required for transportation purposes, but materially decreasing the tare and otherwise conforming to all the modern requirements of the cotton industry and especially the transportation requirement, therefore, be it

"RESOLVED: That the American Cotton Manufacturers Association in convention assembled hereby requests and urges the railway companies of the South to grant the same rate and concession to square bale gin compressed cotton as is allowed to recompressed cotton at the large compress plants, when such gin compressed cotton complies with said carriers' requirements as to density, covering, etc."



ARTHUR H. LOWE, BOARD OF GOVERNORS.

Mr. Beattie in presenting the report on the President's address said that the Association is indebted to its president, Mr. Parker, for his able address on the market values of cotton and certain methods of the exchanges affecting such values. The Committee concurred fully with the view expressed by Mr. Parker and recommended that the Association pass the following resolution:

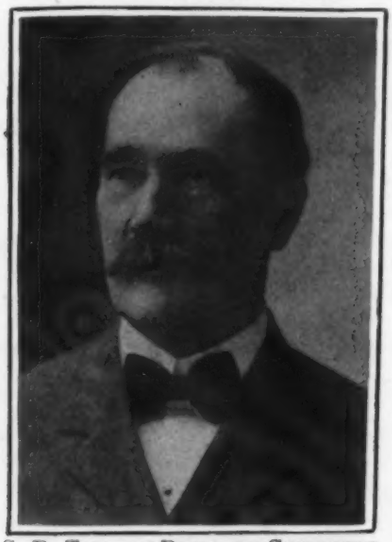
"RESOLVED, First: That this association recognizes the increased cost of raising cotton and that it is necessary that the cotton farmer should receive a fair profit on his product if cotton adequate to the needs of the world's markets is to be raised, and further that the law of supply and demand should govern the price of this great staple;

"Second: That the operations of the cotton exchanges

are not in the best interests of the farmer, manufacturer or consumer of cotton goods;

"Third: That the association fully recognizes the advantages of properly regulated cotton exchanges, but condemns the manipulative methods which have become customary on these exchanges.

"Fourth: That unless by October 1 the cotton exchanges so amend their rules as to make their contracts equally fair to buyers as to sellers, that this association puts itself on record as urging Congress the necessity of passing laws for the proper regulation of these exchanges, or forbidding their use of the mails or telegraph lines.



S. B. TANNER, BOARD OF GOVERNORS.

"Fifth: That this association urges on the exchanges the advisability of certifying cotton stored in warehouses in the cotton States, provided such warehouses are so capitalized or bonded as to fully protect the exchanges, the association believing that by this method a reasonable parity will be maintained between cotton and contracts."

In recommending the resolutions for the consideration of the Association, Mr. Beattie emphasized the point that if the cotton exchanges certified cotton in warehouses it would have the effect of automatically regulating the price of cotton and that of the contract.

Arthur H. Lowe, Fitchburg, Mass., and a former president of the Association, expressed his approval of the president's able address on the subject of cotton exchanges and paid a decided compliment to President Parker by declaring that the Association had discovered a man who could represent the country and especially the cotton manufacturing industry in the nation's highest councils. Mr. Lowe pointed out very forcibly that such an important industry as cotton manufacturing should be placed where the raw material upon which they depend could not be meddled with by men who have no use for it. Mr. Lowe summed up the position of the cotton gamblers somewhat as follows: "These gamblers toil not, neither do they spin, yet I declare unto you that Solomon in all his glory was not arrayed like unto Dan Sully." As a means of curbing the operations of the manipulators, Mr. Lowe advocated a law that would place a tax of two points on the buyer and seller for paper sales of cotton. Mr. Lowe pointed out that with average daily sales of 250,000 bales of cotton of the exchanges, the tax would amount to between ten and fifteen million dollars a year, which would have to come out of the pockets of the speculators. He said that if the cotton crop could be handled as the wool crop is now handled, the cotton manufacturers would feel safer in his position when he had acted upon his best judgment in making purchases for the operation of his mill. Before having the resolution adopted, President Parker called attention to the fact that the law should be that cotton tendered for delivery on the exchanges should be limited in grades from low middling to good middling.

D. Y. Cooper in his motion for the acceptance of the report, called for a rising vote. As the members were taking their seats again, the large hornet's nest at the back of the stage, which formed part of the decoration of the occasion, was shaken from its position and fell to the floor.

Mr. Lowe wanted to know if this resolution was stirring up a hornet's nest already. Amid much laughter, Secretary Bryant gallantly rescued the nest and placed it in its original position.

Wm. E. Hooper, acting chairman of the Committee on Resolutions, presented a resolution referring to a uniform bill of lading, with the recommendation that the Association not commit itself to any special bill, but to refer it to a committee of five with power to act in connection with other commercial bodies. Mr. Hooper then presented a resolution on ship subsidies which practically confirmed the action of the Association at previous conventions. Laurus Loomis, of Catlin & Co., New York City, made an earnest plea for the resolution and pointed out the necessity and advantage of a revival of our merchant marine. Mr. Loomis said in part:

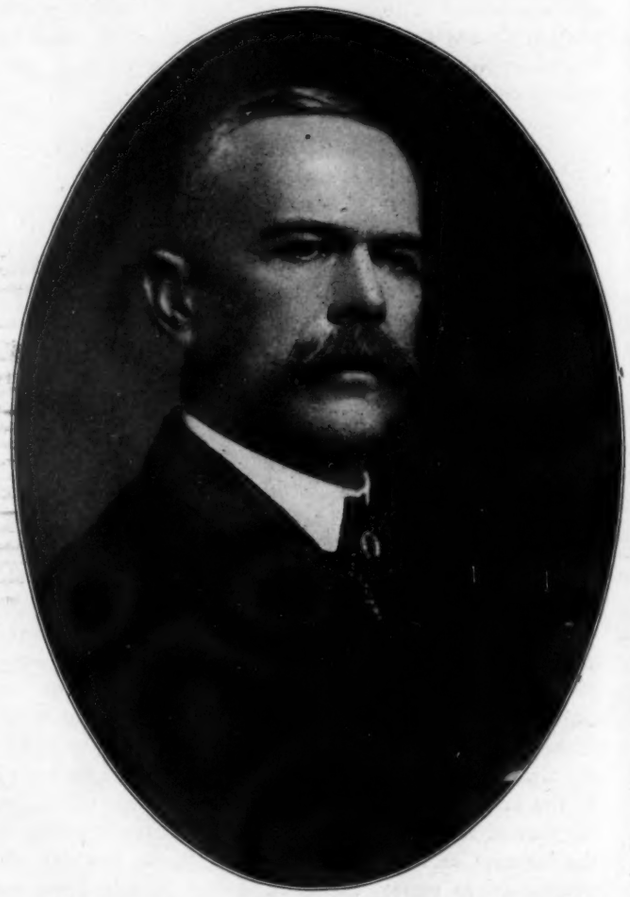
"There is a subject very near the heart of this great nation, both North and South, East and West, affecting materially not only the growth and prosperity of the Republic but it also effects the pride of this nation. That is the restoration of the American ships on the high seas. When the Secretary of War, Hon. Elihu Root, was sent by the President of the United States to South America to encourage commercial and State relations with that nation, there was no merchant vessel flying the American flag, and it became necessary to make the voyage on a war vessel of the United States, the Charleston, and it was on this vessel that the journey was made which resulted in closer relations between Latin America and the United States. Upon his return the Secretary of War was a strong advocate for the American shipping.

The various European nations make liberal commissions to ship owners, also the English government, France, Germany, Spain and Italy. It is stated that the Japanese pay $94,000 to the Japanese steamship lines running between that country and Seattle for every round trip that they make. It is eminently proper that this association should take a position in this matter to encourage the export of our cotton goods to foreign countries. This association at a previous convention in this city of Charlotte, passed strong resolutions and also sent a large delegation of cotton manufacturers to Washington with our ex-President Heath at its head and also D. A. Tompkins to endorse the action of Secretary of State John Hay in the matter of the open door for trade and commercial relations with China.

Recognizing the necessity of the restoration of American shipping on the high seas, and believing thoroughly in the principle that American ships should carry American products, also that a fair share of the money now paid to foreign ship owners, said to be over $200,000,000 for freight

and passengers to foreign countries as England, France, Germany, Russia and Japan, should be paid to American ship owners. I thoroughly endorse the resolutions. All these nations assist ship owners of their own country by mail subsidy. The Italian government, alone, will devote $6,000,000 this year for the assistance of Italian shipping.

It is humiliating to every patriotic American to learn from Admiral Sperry that on the journey of the United States battleships around the world, not a single American flag was to be seen on a merchant vessel. Moreover, the possession of these vessels under the United States flag for the use of the government in time of war is very desirable, which is provided for in the bills now before the American Congress.



R. M. MILLER, JR., CHAIRMAN ENTERTAINMENT COMMITTEE.

R. M. Miller, Jr., Charlotte, N. C., Chairman of the Committee on publicity to which the article on "Child Labor in the South" published in May issue of COTTON, was referred, reported that the article would undoubtedly prove of benefit to the South, but that it was contrary to the precedent of the Association for it to distribute under its seal, articles appearing in textile magazines. Mr. Miller, however, recommended the appointment of a committee of five, to be known as the Publicity Committee with power to spend a reasonable amount in giving publicity to important articles that would prove of value to the textile industry and the Association.

Jno. W. Fries, Winston-Salem, N. C., was then called upon to make a report of his attendance at the International Cotton Congress at Milan, Italy, in 1909. He stated that while he received every courtesy at the convention and his visit was most pleasant, yet he believed that when any member of the Association attended such meetings in the future, it would be much more satisfactory and helpful if he could go as an accredited delegate of the constituent body of the Federation. He said that attendance at such a convention gave one a wider view of commerce of the world, and that the English far surpassed us in their knowledge of international commerce. "The most vivid impression I brought back from this convention was that the scope of these gentlemen's work is much more broader than the growing of cotton in opposition to the planter of the South. It was generally agreed that the production of cotton goods throughout the world was too great for the demand and the only remedy was curtailment. The price of cotton is not a simple arithmetical problem. We can not say that because a crop of 13,000,000 bales sold for 13 cents, that a 10,000,000 bale crops should sell at 15 cents. The demand for cotton goods during the last two years has not been healthy. The world's spindles have been running in excess of the demand for the finished product. England and Continental mills realized the situation a year ago. If the Sherman anti-trust law forbids curtailment, the survival of the fittest will do it. There is no possibility of continued good times until buyers come to us instead of our forcing goods upon them. The consumptive demand is regulated by the cheapness of the finished product. There is a point in the leval of prices when demand must cease. Those who export goods to China can not sell their goods if they quote prices above the ideas of the Chinese buyers. If we undertake to move goods on a 15 cent basis and continue at the same time to make goods in excess of the demand, we shall not be successful. The time will come when we will have good trade, but buyers will not operate on the present level of prices."

D. Y. Cooper, Henderson, N. C., who was very much interested in the subject of having more members of the American Association join the International Congress, spoke a few words, saying that the American manufacturer could learn a great deal as to how to use waste to the best advantage. A motion was carried to the effect that the relation of the Association to the International Federation be referred to the Board of Governors with power to act.

A resolution of thanks was then passed for the courtesies extended by the telephone, telegraph and car lines and Southern Power Company, and to Mr. R. M. Miller, Jr., and to Mrs. Stuart W. Cramer, for their receptions tendered the ladies. Mr. Fries was also thanked for his report on the Milan Convention.

C. B. Bryant, secretary and treasurer of the Association, then rendered his joint report which showed that there are now enrolled 1,115 members. Mr. Bryant recommended the increase in the annual dues from $5 to $10 per annum to become effective April, 1911. Mr. Bryant mentioned that the statistical secretary's report would be printed later.

The committee on nominations with Stuart W. Cramer, Charlotte, N. C., chairman, presented the following nominations, and by the adoption of the report the gentlemen were unanimously elected to the respective offices for the ensuing year:

President—D. Y. Cooper, president Henderson Cotton Mills and Harriett Cotton Mills, Henderson, N. C.

Vice-President—Ellison A. Smyth, president Pelzer Mfg. Co. and Belton Mills, Greenville, S. C.

Secretary and Treasurer—C. B. Bryant, Charlotte, N. C.

Board of Governors—Chas. K. Oliver, president of Con-

solidated Cotton Duck Corporation, Baltimore, Md., chairman; W. E. Beattie, president and treasurer of Piedmont Mfg. Co., Greenville, S. C.; W. T. Bryan, treasurer of Southern Mfg. Co., Athens, Ga.; Caesar Cone, president of Proximity Mfg. Co., and White Oak Mills, Greensboro, N. C.; Scott Maxwell, Indian Head Mills of Alabama, Cordova, Ala.; Carroll Baldwin, commission merchant of New York City, and president and treasurer of the Savage Mfg. Co., Savage, Md.; and Jesse T. Eddy, Jr., of Tillinghast, Stiles & Co., yarn dealers, Providence, R. I.

President-elect Cooper was then called to the chair, and in a few words assured the convention that he would do all in his power to further the interest of the Association. Immediately after adjournment the board of governors held a brief session and elected Chas. K. Oliver, Baltimore, Md., chairman of the board.

The afternoon was devoted to a barbecue and dance and the baseball game. On Thursday the Southern Power Co. had a special train to take the members and visitors to Great Falls station where an inspection of the plant was made and luncheon served.

The local committee headed by R. M. Miller, Jr., deserve the praises of the Association for their untiring efforts and success in preparing for the comfort and pleasure of the visiting members and guests. The committee was composed as follows:

Geo. B. Hiss, S. B. Tanner, D. A. Tompkins, E. A. Smith, A. J. Draper, A. G. Brenizer, W. C. Wilkinson, S. W. Cramer, A. H. Washburn, O. A. Robbins, S. B. Alexander, Jr., Edwin Howard, B. S. Moore, R. L. Tate, A. C. Hutchison, J. W. Conway, J. H. McAden, J. H. Mayes, H. H. Boyd, Robt. Lassiter, R. A. Lee, A. L. Smith, E. P. Tingley, R. J. Walker, J. H. Cutter, J. S. Cothran, E. S. Reid, Paul H. Allen, T. M. Constable, J. A. Tate, C. W. Johnston, Phil. McMahon, H. W. Eddy, W. S. Lee, Jr., A. E. Moore, Jno. C. Rankin, R. R. Ray and R. S. Reinhardt.

Sketch of D. Y. Cooper.

D. Y. Cooper, the newly elected president of the Association is president of the Henderson Cotton Mills and Harriett Cotton Mills, Henderson, N. C., having been associated with the textile industry for 12 years. He first established the Henderson Cotton Mill in 1898 in his home town of Henderson, N. C., with an equipment of 5,000 spindles. Previous to his entry into the textile field, Mr. Cooper was engaged in the tobacco commission business, which interest he has not relinquished, in fact, the business has expanded until now he is considered to be one of the largest commission tobacco men handling high grade tobacco in the world.

Mr. Cooper has been a member of the Association for over ten years, and his active work in various capacities has been of great benefit to the Association and the industry. As a manufacturer of yarns and sheetings, he is well known in New York and the East. His specialty has always been respun hosiery yarns in numbers from 10s to 30s, put up in skeins and on cones, and he is one of the largest producers of such yarns in the United States.

The growth of the Henderson mill has been rapid, so that now there are 30,000 spindles as compared with 5,000 when the mill was started 12 years ago. The Harriett Cotton Mills known as No.. 2 mill, have only been completed a short time and contains 11,000 spindles. Mr. Cooper is at present completing the equipment of the Henderson Mill No. 2, containing 15,000 spindles. This gives a total of 86,000 spindles, and there are 216 broad looms for producing sheetings.

As an active worker in the Association, Mr. Cooper has spent much time and thought in the interest of the industry as a whole. He was a member of the Board of Governors for five years, and was a member of the body at the time of his election to the presidency. In 1908, he was sent as a delegate to the Paris conference of the International Federation of Master Cotton Spinners and Manufacturers' Association, the formal report of this visit being submitted last year at the convention in Richmond, Va. Mr. Cooper is a director in several banks in North Carolina, and is president of the graded schools of Henderson which position he has held for ten years. During that time he has succeeded in developing the school system to a high state of efficiency.

PRESIDENT'S ANNUAL ADDRESS.

BY LEWIS W. PARKER, GREENVILLE, S. C.

The past year in our business has been a period of great difficulties, and to most of us not attended with profit. Whilst, in some few classes of goods, results, owing to special causes, have been satisfactory, this is not true in the great majority of cases, and in the case of some goods the operations of the plants have been attended with serious losses and reverses.

It seems a little difficult to see why such should have been the case. The country at large has, on the whole, prospered. Throughout the whole country labor has been generally employed at good wages, and in many branches of industry wages have been materially advanced. It would seem, therefore, that the consumptive power of the people should have been greater than usual, and that there should have been a correspondingly large consumption of cotton goods. During the year 1909 the cotton mills of the United States, as a general proposition, ran to their full capacity, and the consumption of cotton was the largest in the history of the industry. Apparently, at the beginning of the new cotton year, there had been an absorption on the part of the public of all goods manufactured, except in the instance of a few special lines. Since, however, the present cotton season, except in limited periods, there has not been activity of demand for goods nor demand at prices affording a profit to the manufacturer.

The first three months of the present cotton season, as had been the last three months of the preceding season, were, as a general proposition, a period of advancing prices of the raw material. During such period those mills who were fortunate enough to have an ample supply of the raw material had handsome results, but these results were really the profit of the disposition of the raw material rather than profit in manufacturing. Indeed, cotton manufacturing has now degenerated into that condition when profitable results are no longer a matter of good management in manufacturing, but are dependent almost altogether upon the judgment exercised in the purchase of the raw material, or rather, I would say, the luck attending such purchase. The constant and extreme fluctuations in the raw material have become such as to overbalance in influence all other subjects entering into the value of the product.

So far as these fluctuations are the result of varying conditions in the production of the raw material, the manufacturer can not complain; such must be accepted as the unfortunate conditions of the industry; but if fluctuations are the result of causes not natural, but, on the contrary, manipulative, or if the natural fluctuations are exaggerated through manipulative influences, then the manufacturer has a good cause of complaint.

It must be admitted, on our part, that a portion, at least, of the unfortunate results of the past year is due to

LEWIS W. PARKER.

ourselves. Throughout last summer and the early fall, manufacturers, as a whole, resisted the advance of the raw material, which was consequent upon the shortage of supply. We apparently were slow to appreciate how short, indeed, was the supply, and were much behind, in this appreciation, of the speculative element which foresaw conditions much better than we did. Our own distrust in prices of the raw material, our own disbelief in the justification and permanency of those prices, were necessarily communicated to buyers of goods, and this distrust on the part of buyers was increased when, during the fall and winter, there were violent reactions in price.

If there be raw material of any character in a high price for which the country at large is interested, it is cotton, for so large a proportion of cotton—approximately three-fifths of the production—is exported. It is natural that the planter should expect and demand a higher price for his product. This product must be expected to be upon a higher level of price than it has been in times past, and even the relatively high price prevailing during the last fall and winter, and now prevailing, is not out of proportion to other agricultural products and to the great mass of manufactured articles, many of these having risen in value, as compared with conditions of thirty years ago, 100 per cent.; whereas, cotton to-day is not above 50 per cent. higher than what may be termed its normal price in times past.

There must, therefore, be recognition on our part that a new price level in cotton is both proper and necessary, and that we must bend our energies, not in the effort to reduce this price level, but in the effort to convince buyers of its necessity and propriety, and of the necessity, therefore, of a consequent rise in the price of manufactured products. It has been now nearly thirty years since I entered business life, and yet do I well recall that in the fall of 1882 one of the most standard of bleached goods was sold for the first time at ten cents a yard, and that it was regarded as remarkably cheap. Since that time we have seen that same product decline to six cents a yard, and now, notwithstanding all the advances in raw material and in wages, it does not equal on the market the price of thirty years ago. Whilst there has been, in recent years, considerable advance in wages in cotton manufacturing, yet the fact remains to-day, as had long been a fact, that wages in the cotton mill industry are below the scale of wages prevailing in almost all other skilled industries. We must naturally expect, therefore, continuous advances in wages, and the necessity of struggling for advancement in the price of our product will become greater and greater.

A part unquestionably of the misfortunes of the past year has been due to the tendency of ourselves to depreciate the value of the raw material we use, the value of which, notwithstanding our efforts, has risen in great degree, consequent upon that inevitable law of supply and demand. There is no reason to-day for us to believe that we are to see, at least in the coming year (if natural laws are to prevail), any serious reduction in the price of our raw material. The mills, by September 1st, next, will have been denuded of their entire reserve stock, as they had been on September 1, 1908. A bumper crop is necessary for the next year to supply the actual demands of the world and to re-establish to the mills that reserve which is necessary for their comfort and well being. Even if a crop of 14,000,000 bales be raised during the coming year, there is reason to believe under natural conditions, and in view of the constant increase of the uses of cotton for manufacturing purposes, and in different characters of goods, that the price prevailing throughout another year will be much above that price which we have heretofore considered as the normal price. Essentially, therefore, should our efforts as manufacturers be directed to an increase in the price of our product.

There is no necessary conflict between the manufacturer and the producer, and there should be no feeling on the part of the manufacturer that he desires to see a reduction in price of raw material below that which would yield to the producer a fair return, and, indeed, a good return for his labor; but, owing to conditions beyond our control, in the past the manufacturer has learned by dear experience that it matters not what the supply, and it matters not what the demand, there will be violent fluctuations in the raw material, and that these violent fluctuations tend to unsettle trade and to throw the burdens thereof entirely upon him. We have all been so scorched by purchasing raw material at a price which seemed fully justified to us by conditions of trade and by supply, and yet have seen this price so affected by influences not justified by these natural laws, but rather by manipulation of speculators and gamblers, that we have all become timid in the purchase of our raw material.

It is folly, therefore, for any manufacturer to claim that he is not interested in the manipulations of the cotton market, or that he is not interested in the effect upon

the raw material of cotton exchanges whose rules and whose methods tend towards the manipulation of the price of the raw material. In the early part of February there was a discussion in Washington, before the Congressional Committee on Agriculture, of the various bills proposed to control and limit operations on the various cotton exchanges. The purport of these bills was to limit the operations on the exchanges to those who in good faith intended to sell the product or in good faith to receive it by purchase; to limit, and, if possible, prevent the operations of those who had no such intents, and whose only purpose was to speculate through these exchanges and to seek to control the price of contracts on the exchanges to their own profit. The principal cotton exchanges in the United States do not make a record of the quantity of the transactions occurring on their exchanges. There is no positive record of the amount of sales and purchases on these exchanges; yet there is good reason to believe that on these exchanges the cotton crop is sold and purchased in the course of a year from ten to forty times the amount of the crop actually grown. There is no relation between the price of contracts on the exchanges and the actual price of spot cotton, owing to the great extent of these operations on the exchange. Our experience in the past has been that, with a very few exceptions, we are not able by any means to purchase our raw material at the price indicated by the exchange. A very wrong conception is thereby given to the public at large, and to buyers of goods, as to the price this raw material actually costs the manufacturers. The effect of this misconception is to make the public and the buyers of goods resist advances in price necessary and consequent upon advances in the price of raw material. At times, we have seen a disparity between the price on the exchanges and of spot cotton as much as 2½ and 3 cents per pound, and this disparity in itself, in many classes of our goods, would be a good profit to us.

This Association has, in its previous proceedings, recognized the effect upon our industry of the manipulation of prices. In a report presented to the Association by our distinguished Chairman of the Board of Governors, Capt. E. A. Smyth, it states that "what is desired by both parties is a fair value to the commodity, allowing to the producer a fair profit in the raising, and fixing in some measure a stable price upon which the spinner can calculate in making his sales. These two results can not be secured under present conditions on the exchanges, and particularly on the New York Exchange, and your committee does not feel that it can conclude its report without expressing its disapproval of the contract of the New York Exchange, and a sincere hope that the leaders on the New York Exchange will realize the defects of their contract and sincerely attempt to remedy the same. Under present conditions, the contract on the New York Exchange can be of value only to the speculator. It is not to the producer or to the manufacturer."

Since that period, now two years, constant efforts have been made by this Association, by its officers and its members, to secure a rectification of the conditions complained of. These efforts have been of little avail, so far as the New York Cotton Exchange is concerned, and even in the case of the New Orleans Exchange conditions have not been rectified to the full extent that your committee had hoped for.

It has either been impossible to bring home to the members of the New York Cotton Exchange the fact that the rules and methods of their exchange tend to a manipulation of prices, or this manipulation of prices is desired by the members of the exchanges for their own purposes and in order to insure to them business which they fear they would not otherwise receive. The amount of sales and purchases which can legitimately be made on the exchange by the producer and by the consumer of cotton is small in quantity, compared to those which are continually made by the speculator. It can therefore be appreciated that the speculator's business is to most members of the exchanges of much more moment and importance than the business of the legitimate producer or consumer; and yet, with the influence which the exchanges have, and particularly the New York Exchange, which is to-day the most influential factor in determining the price of cotton, the effect of the exchange upon the producer and upon the consumer can not be ignored. There is presented the condition in which he who never raises a bale of cotton, who never, indeed, in the course of a season sees a bale of cotton, who never pays the producer for a bale of cotton, or who never sells a bale to the consumer, is able to control, through the exchange and through the purchases and sales on the exchange, the price of the commodity in a way that no hundreds of thousands of legitimate producers can, and in a way that no reasonable aggregation of manufacturers can. Such a condition is unjustified and should not be permitted to exist. The very lives and fortunes of too many of our fellowmen are affected by the manipulations of prices of an agricultural product upon the exchange for our Government to sit idly by and see such manipulation in price, without raising its voice against it and seeking to prevent it.

Gambling on a cotton exchange is just as bad, in every particular, as gambling in any other form, and should be prohibited by law. He who is buying that for which he has no use, or which he is unable to pay for, and which he has no expectation of receiving, is a gambler. Likewise is he who is selling that which he has not, which does not belong to him, and which he does not expect to deliver. It is useless to argue that the great mass of operations on the cotton exchanges, and particularly on the New York Cotton Exchange, are made with the sincere intention of either delivering that which is sold or accepting that which is bought; the intention, as is well known, judged by the knowledge of the course pursued by those operating on the exchanges, is that a very great per cent. of the operations are simply with the expectation of settling upon differences.

As has been pointed out in the proceedings of this Association, the contract of the New York Cotton Exchange is essentially a seller's contract. It is essentially a contract, the effect of which is, on the average, to depress the price of the commodity to the extent that advantages are given to the seller in contrast with the buyer. It is a contract the effect of which is to mislead generally the public as to the value of the commodity traded in, and in general (though there are exceptions to this statement), to give an impression of a value of this commodity below that which it commands on the market. Those clauses of the contract which have this effect have been heretofore pointed out by this Association, and the Association has earnestly urged a rectification of those injustices. Notwithstanding the repeated requests of both producer and manufacturer for a correction of these abuses, the New York Cotton Exchange

has continued to preserve those features in its contracts which are so objectionable.

What is the policy to be pursued by this Association? Shall it merely reaffirm its previous positions, or shall it, recognizing the fact that its own industry is being seriously affected, call upon the powers which can remedy the trouble to exercise rights of government and prevent a continuation of the evil? To my mind the answer is conclusive: that there must be action by government to protect interested parties, if the exchanges will not themselves regulate their contract so as to be fair and just to both buyer and seller, and if they will not so regulate their contract as to make much less, if not, indeed, to prohibit altogether, that manipulation of prices which we so constantly see. It is an absurdity when prices vary, as they do on the exchanges, without reference at all to the natural conditions of supply and demand, and without reference to the prevailing prices for the actual commodity.

I would therefore recommend that this Association pass resolutions approving the policy of the bill now pending in Congress, known as the "Scott Anti-Option Bill."

In conclusion, I would extend to you my most sincere thanks for the honor you have done me in promoting me to the office of President of the Association; in such way as I could I have, during the year, given my time and thought to the interests of the Association, and although it may appear that little has been accomplished, I can assure you, at least, that there has been an earnest effort and desire. I would extend particularly to the Secretary of the Association my thanks for the many courtesies shown me during the year, and my appreciation of that ability and zeal which have always marked him in the discharge of his work for the Association. The committees of the Association have, doubtless, during the year discharged all the work assigned to them, and the Board of Governors have had several meetings upon matters connected with the affairs of the Association, and cotton manufacturing in general. I feel that during the year something, at least, has been accomplished, and can only wish that my successor in office shall be able to do more than I have in the promotion of matters for the good of the Association, and affecting the industry at large.

SECRETARY-TREASURER'S REPORT.

C. B. BRYANT, CHARLOTTE, N. C.

The past year has been burdened with many perplexing problems for the cotton manufacturer, and foreseeing these conditions your board met in this city on October 8 last, and after careful deliberation adopted the following resolutions:

"In view of the disparity now existing between the price of cotton and cotton goods, we resolve:

"1. That a committee of five be appointed to formulate a curtailment agreement.

"2. That we recommend to every mill which is in position to do so to sign this agreement and enter upon general curtailment until the price of goods becomes on a parity with the price of cotton."

Your secretary and the committee were quite active in distributing copies of the resolution to all members, and received replies from many mills indicating their approval of the plan of curtailment, and we believe the large majority of the mills have curtailed to a greater or less extent in accordance with the resolution. It is quite impossible to state in percentage the exact curtailment, but it has gradually increased with the advance in the price of cotton and the decline in the price of and demand for manufactured goods, until now curtailment is being practiced throughout the mills of this country to an extent probably commensurate with the smallness of this cotton crop, which will undoubtedly create a dearth of goods and consequently a great scarcity at high prices later.

The work of the various committees of the organization requires an increasing amount of expense money, and to meet these expenses we recommend your increasing your annual dues to $10 per annum. It is proper that the traveling expenses of your officers and board and the committees in attending various meetings during the year be paid by the Association, and then we should not overlook their giving freely of their time without charge for the general benefit of the entire membership.

A careful examination of the financial report attached will show the necessity of such action, or the adoption of some other plan for defraying these expenses.

C. B. BRYANT, SECRETARY-TREASURER.

The membership continued quite representative of the industry. We have received 116 new members during the year. We have lost by death nine, by resignation fifty-four, leaving a net total of 1,115. Our membership should be larger, numbering 1,500 or 2,000, so that the organization may be considered not only representative, but bespeaking the will of the whole textile interest of the country.

You will be called on to elect at this meeting the following officers: President, vice-president, secretary and treasurer and seven members of the Board of Governors.

The chairman of the Board of Governors is elected by the board itself. One member of the board is to be elected to fill the unexpired term of Chas. B. Amory, who has resigned. Suggestion is here made that your nominating committee designate the member elected to fill out this term, which expires May, 1911.

The financial report showed total receipts of $4,642, and a balance carried forward of $2,096, making a total of $6,739. Total expenses for the year were $3,759.

The recommendation increasing the dues to $10 per annum was carried.

REPORT OF COMMITTEE ON UNIFORM SALES CONTRACTS.

LEWIS W. PARKER, CHAIRMAN.

Your committee has continued since the last meeting of the association to work on the proposed uniform sales note, seeking to perfect this and to make it satisfactory to all classes of users thereof. During the year the committee has had a number of meetings and has consulted most freely with commission agents, with converters of cloth and also with other buyers and with users of yarns. We feel that we can report material progress and that we are now very near the point of securing in the trade the adoption of the contract.

FAIR TO ALL PARTIES.

Of course, it has been essential to convince buyers that we were only seeking that which was fair and just and that it was proposed to make the sale note absolutely fair to buyers; that the objects sought were not selfish but on the contrary were to prevent misunderstandings and to protect the honest dealers; that the proposed sale note would hold the manufacturer to a degree of care and to a standard of excellence that he probably had not been held to previously.

We are pleased to say that buyers have reciprocated the efforts of your committee and have shown a willingness to meet us half-way in proposals to be embodied in the sale note. Leading converters and buyers have given a considerable amount of their time and much thought to the proposed agreement and there remain only a very few details to work out when the sale note will be recommended to the trade generally by committees representative of this association, of commission agents and of converters, and your committee believes will then be generally adopted.

Your committee has continued to act in harmony and hearty co-operation with the committee of the National Association of Cotton Manufacturers, and it has only been through this harmony and co-operation that as much has been accomplished as has been.

SHOULD REQUIRE USE.

Your committee desires to impress on the members of the association that after the sale note shall have been perfected and recommended to the trade, little will have been accomplished if the members of the association do not require of their representatives and selling agents that the sale note be used. Whilst the sale note is protective to manufacturers, it is also exacting of them and some members of the association may be disposed to dodge these exactions, but your committee feels that if careful thought is given to the subject each member of the association will feel that it is more important to him to have a full knowledge of what he is held to in the contract than is the possibility at certain seasons of escaping the full measure of responsibility to which he will hereafter be held.

The salient points of the proposed contracts are as follows:

SALIENT FEATURES.

(1) It clearly defines the limitation of liability on the part of the manufacturer in the delivery and storage of goods, and definitely determines when this liability ceases. It has been a matter of serious importance in the past, the uncertainty of the liability of manufacturers in the case of goods held in storage at request of buyer, for casualties beyond the control of the manufacturer, and particularly by fire. The limitation of liability in these matters is clearly expressed in the proposed sale note.

(2) Provision is made in the sale note to prevent the unfortunate practice heretofore existing of cancellation of contracts on slight pretexts. It is provided under the terms of the sale note that cancellation can only be made for a "substantial breach of the contract," and your committee feels satisfied that under these terms defaults in delivery of a few days will not justify the cancellation of a contract, though under the terms of the sale note it may justify the cancellation of the delivery in question. Likewise the delivery of a small portion of an order in defective quality, whilst it may and does justify the rejection of the goods so delivered, does not justify under the terms of the sale note the cancellation of the entire contract.

(3) Likewise there is a clear definition of what is expected of the manufacturer in the matter of compliance with the construction of goods. The variations in width, weight and count are clearly expressed and whilst these provisions are exacting and will hold the manufacturer to a degree of care that has not previously existed, it will be best for both buyer and seller that the construction to be given is clearly understood. The effect of these rules will be to make a better character of cloth than has heretofore been made, but it is hoped that a better price will accordingly be realized.

In conclusion, your committee recommends that it be continued in existence for another year, in the confidence that when the association next meets, they can report the agreement as perfected and in operation.

EXCESS TARE ON COTTON BALES.

BY JOHN A. LAW, PRESIDENT SAXON MILLS, SPARTANBURG, S. C.

In every line of business there seems to be certain necessary evils which can not be entirely eradicated, but must simply be minimized as far as practicable—confined within the narrowest possible limits. Such an evil bagging and ties, or "tare," must always seem to the purchaser of cotton, at least so long as cotton is purchased by the gross weight of the bale. And this burden seems particularly onerous when the cost of cotton is around fifteen cents, while the covering, purchased in bulk with the bale at the cotton price, is worth only, say three-fourths of a cent a pound.

Some one is perhaps ready to say that the spinner, or other purchaser, takes all this into consideration in the price which he offers for the cotton; in other words, that the price discounts the tare upon the bale. This is no doubt a sound economic proposition. In fact, students of economics would probably tell us that in the final analysis—under the workings of the laws of supply and demand—it is the consumer, or purchaser, and not the producer or seller that in reality fixes the price of any commodity. But in this day of corners, forced prices, and manipulated markets, it is difficult to reconcile or apply these abstruse propositions. This body of manufacturers would doubtless confirm the assertion that the workings of the laws of supply and demand seem to be overdone along many lines these days. The average manufacturer, when he pays fifteen cents a pound for the bagging and ties on a bale of cotton, and sells them at three-quarters of a cent, is very strong in his opinion that he has lost fourteen and a

quarter cents for every pound of covering that is on the bale.

The covering of cotton is intended for one purpose only—merely to keep it intact and to preserve it during the period of transportation from farm to factory. Unless exposed to moisture, cotton is one of the most enduring, imperishable products of the field. Only so much covering should be allowed as is necessary for its proper protection in transit. It is not supposed that the covering is to take the place of the farm shelter or warehouse, nor of the railroad freight car, thus enabling the shiftless farmer or the negligent transportation company to ruthlessly expose it to the ravages of the weather. In the judgment of the writer it is high time for the purchasers of cotton, whether actual consumers or the middlemen who are held responsible by the consumer for delivery in proper condition, to insist upon greater care in storing. It is also necessary to make it plain to packers of cotton, whether at gins or compresses, that efforts to make the covering a source of profit, by the use of excess patching or ties, is not only wrong in principle but a simple perpetration of fraud which will not be tolerated.

With a law on the statute books fixing the recognized weight of tare at 20 pounds per bale, the recently-adjourned South Carolina Legislature passed an act making it a misdemeanor to deduct for tare unless its weight exceeds six per cent. of the gross weight of the bale—thus practically fixing a tare allowance of 30 pounds to the bale. It may be of interest to both manufacturers and cotton merchants to know that, in the opinion of some of the best lawyers of the State, the act is probably unconstitutional in that it limits the right of contract between parties. An early test case will doubtless be made.

Is it not a matter of mutual interest to both purchaser of cotton and the careful, honest packer—whether farmer at the gin or cotton merchant at the compress—that proper deductions be made for unfair loading in each specific instance, rather than that all should be penalized by discount in purchase price? Should not the good shipper join forces with the spinner in removing this unfair source of profit against which he has to compete? And further, might it not be well for the purchaser or consumer to do still more by offering some inducement in the form of a bonus to the progressive farmer who adopts methods of improved packing with lighter covering?

It seems a foregone conclusion—though slow, perhaps, in arriving—that the process of compressing, with its many attendant disadvantages, such as delays, occasional fraudulent packing, and frequent excessive covering, must sooner or later be abolished. Could not the consumer hasten this result by allowing to the farmer, as a special bonus upon each bale, say $1.00, as representing in part the actual saving on a bale that is packed and covered by improved methods, obviating the necessity of compressing and requiring a covering weighing only 12 pounds, or practically one-half of the usual tare? A recognition of mutual interest and occasion for co-operation would thus be shown in a practical way to the progressive farmer, while, in reality, he is only being put upon a proper parity with the user of methods that are long since out of date and fit subjects for revision.

The average tare on Indian cotton is eight to nine pounds per bale of average weight of, say 400 pounds, and sales are made under guarantee that they will not exceed ten pounds, a saving in tare loss of nearly one-third being thus effected by their lighter covering and different methods of packing. In this connection the fact should not be overlooked that in all cases of shipment of cotton covered with excess tare an additional loss is sustained in the payment of freight on such excess weights. In cases of long hauls and attendant high freight rates this loss becomes an appreciable one.

Recognizing, hence, that some tare is, of course, unavoidable, but that under prevailing conditions its amount must necessarily be minimized, the question finally resolves itself largely into one of ascertaining what is the least amount of covering that is reasonably required for the proper protection of the "fleecy staple" while in transit. That different amounts are required as between compressed cotton and soft cotton, on account of the difference in the size and density of the bale, is evident, and the proper difference in requirement should be easily determined. Unfortunately, the length of the journey that the cotton is to make, and the consequently increased handling, seem to make it almost necessary to have a further division of compressed cotton into two classes, namely, that intended for export and that for American consumption. This difference in actual requirement of covering is possibly the occasion of the difference in allowances provided for tare by the Cotton Rules Committee of the Southern Associations as compared with the allowances made by New England mills, Liverpool, and the Continent. In fact, the views of the amount of tare required, and hence, the proper allowance therefor, seems to indicate increased weight in accordance with the distance traveled, Carolina mills fixing it at 24 pounds to the bale, Eastern mills, with few exceptions, at 25 pounds to the bale, and Liverpool and the Continent at, say 26.8 pounds per bale.

Cotton brokers and merchants argue that this difference really works to the detriment of the Eastern as against the foreign mill, and to the Southern mill as against both Eastern and foreign, asserting that the cotton merchants add this difference to the price quoted the Southern mills, and if he does not obtain it, it gives the preference to the foreign purchaser, who gives him an additional allowance of, say three pounds per bale. The further argument is made that 24 pounds of tare is too little, not allowing sufficient covering for bales that vary from the standard up to 70 inches long. The provision of the Liverpool and Continental rules allowing canvas at $3\frac{3}{16}$ per cent. of the weight of the bale is certainly more elastic, and perhaps more equitable, though possibly more cumbersome in entailing detailed calculation.

Some cotton brokers go so far as to argue that the application of the rules by rigid deductions for excess tare operates against the purchasing mill, in that shippers add to the price of cotton an amount fully covering probable deductions for excess tare, and that the spinner thus pays in each instance for the excess tare, whereas, if the rule were not applied, and hence no such addition to the price made, he would bear the burden of the excess tare only in the comparatively few cases where it actually existed. Few manufacturers are disposed to accept as correct this view of the matter. A similar argument is made as to the franchise or three pounds allowance for loss in weight. The experience of most purchasers of cotton has, I think, been that both the loss of three pounds and excess tare becomes

more and more frequent unless fixed methods are adopted for checking these irregularities.

There is vigorous, and in the opinion of the writer, well-founded objection on the part of cotton merchants as to reservation by the purchaser under the Carolina Mill rules allowing a period of one year within which to make claims for excess tare. Such reservation may perhaps be necessary with fraudulently packed bales, but it hardly seems fair to the shipper to withhold claims for excess covering throughout an entire season, thus affording the shipper no opportunity of verifying claims which he perhaps may have in turn to collect from a previous seller. Few mills are justified in keeping constantly in their opening room a man capable of carefully stripping and weighing tare from each bale as it is opened, and keeping proper record of its mark and number, so that the record of the individual bales from the various shippers may be eventually grouped and accurate calculation made of the excess covering. In fact, it is questionable whether, in the language of Bert Harte, "the ends would justify the proceedings." Is it not more practicable, and more equitable, to notify the shipper in all cases where, while first unloading the cotton, the covering should appear to the mill as excessive. The shipper could then have his representative go at once to the mill, witness the stripping of such number of bales as were necessary to obtain a fair average of the weight of the tare, and a final adjustment of the matter be then and there agreed upon.

Another feature in which many of the mills are seriously at fault is the custom of selling and re-selling their dilapidated and over-patched bagging patterns to neighboring local ginners, to be re-bought at the cotton price by themselves or other mills. Would it not be advisable for the various groups of mills to have concentration points to which their old bagging and ties could be shipped in bulk for re-working—perhaps for re-weaving the bagging—thus not only eliminating the frequently unwise competition between themselves in sales of their bagging and ties, but also overcoming the greater evil above mentioned, in providing the ginners with covering of such dilapidated condition as simply necessitates excess loading?

WAREHOUSING COTTON IN THE SOUTH.

BY L. H. BULLARD, MEMPHIS, TENN.

In the preparation of my remarks on the warehousing of cotton in the South, I have conferred with a number of my associates in business. One of them suggested to me that my paper be prepared from this point of view, viz.: How would I spend two and a half million dollars turned over to me for the purpose of inaugurating a system of warehouses for the storage and handling of cotton preparatory for shipment in the cotton-growing States, with a view of protecting the staple, and preserving every economy for promoting the interest of both the producer and the consumer?

It was suggested that I bear in mind the fact that a professional warehouse company or warehouseman is, in a certain sense, a public servant. It is not a company or individual engaged in the selling of cotton or in the selling of a manufactured article, yet, in the nature of a salesman—selling his services. And I am mindful of the fact that there can be no rightful or sound selling of anything unless it is beneficial to the buyer as well as to the seller. Therefore, from this point of view, I am expected to recommend a system of warehousing and handling cotton which will not only be remunerative to the investment interest I am representing, but profitable as well to my patrons.

As I see and understand the situation, there are two kinds of warehouses needed in the cotton-growing States.

FIRST.—A warehouse for the shippers of cotton, formed of platforms covered with sheds,—inexpensive properties

L. H. BULLARD.

from the standpoint of construction, yet built in a manner to obtain a maximum service for the shippers at a minimum cost; a warehouse for the quick handling of cotton in and out; a warehouse which yields a reasonable profit to the investor; one, however, that does not in any way affect the shipper's interest with respect to insurance under a marine cover.

SECOND.—Warehouses for farmers, merchants, factors and others who hold cotton and who use the regular fire insurance covers instead of marine contracts. These warehouses should be of brick, concrete or other fireproof construction, with automatic sprinklers, and so arranged as to carry the minimum insurance rate, or a rate not exceeding 25 cents per annum on each $100 in value; a rate, say, of one or two cents per bale per month.

Each warehouse plant should be provided with the two kinds of facilities described. And these warehouses should be located at designated points most convenient to the cotton trade.

The location of warehouses at concentrating points is necessary for a number of reasons, of which I will mention two:

(1) The cotton should be at a point where there is strong buying competition, in order to realize the maximum price on a moment's notice.

(2) Volume is required in order to obtain a strong, reliable organization and management, and at the same time minimize the cost of handling.

At present, the warehouses at each concentrating point

would probably have to be equipped with a compress machine. There are many gin compresses now in operation throughout the cotton-growing States, and more are being installed every year. But it is necessary, even for gin-compressed cotton, to be assembled at some concentrating point for reshipment, in order to realize the maximum prices. In fact, gin-compressed cotton, with a few possible exceptions, is now being assembled at concentrating points for reshipping purposes, just the same as the uncompressed bales, the difference being that such cotton, having already been compressed at the gin, it is not again compressed when it goes forward from the concentrating point, thus avoiding the expense of compressing at that point.

We can not obtain, in any system of warehousing of cotton in the South, the maximum results at a minimum cost without a close co-operation on the part of the carriers.

I have here an illustrative picture of what I mean in speaking of concentrating points:

Memphis, Tenn., is the heart of the Mississippi Valley.

MAP SHOWING COTTON CONCENTRATING POINTS WITHIN 100 MILES OF MEMPHIS, TENN.

Memphis, you will note, is located at the point of intersection of three States—Tennessee, Arkansas and Mississippi. It is estimated that about 800,000 bales of cotton are grown within a radius of 100 miles of Memphis. This map shows 21 concentrating and reshipping points within the 100-mile radius, taking Memphis as a center and including Memphis. At these 21 points cotton is concentrated for reshipment under well-defined, yet equitable rules and regulations promulgated by the carriers, each point now handling cotton through its present facilities in quantity about as follows:

Memphis, Tenn.	600,000 bales
Jackson, Tenn.	20,000 bales
Newport, Ark.	55,000 bales
Tupelo, Miss.	55,000 bales
Grenada, Miss.	32,000 bales
Helena, Ark.	75,000 bales
Holly Springs, Miss.	25,000 ables
Okolona, Miss.	21,000 bales
Clarksdale, Miss.	75,000 bales
Paragould, Ark.	15,000 bales
Osceola, Ark.	20,000 bales
Corinth, Miss.	50,000 bales
Covington, Tenn.	50,000 bales
Rosedale, Miss.	25,000 bales
Dyersburg, Tenn.	35,000 bales
Brownsville, Tenn.	20,000 bales
New Albany, Miss.	25,000 bales
Como, Miss.	20,000 bales
Houston, Miss.	20,000 bales
Forest City, Ark.	25,000 bales
Cotton Plant, Ark.	15,000 bales
	1,278,000 bales

At Memphis there are the two kinds of facilities for shippers, factors, etc., that I have described, and in a measure some of the other points have the character of facilities mentioned.

There are no monopolistic features connected with this plan of warehousing cotton. To illustrate:

FIRST.—Memphis draws cotton at times from points beyond the 100-mile radius; but the Memphis trade, with exceptional cases, is not allowed concentrating or reshipping privileges on shipments arriving from or past other concentrating points. This trade Memphis draws largely on account of its big market, and on account of the advances made by her merchants and factors for the raising of the crop. Furthermore, Memphis has the character of warehousing facilities especially suitable for holding cotton, which is attractive.

SECOND.—(a) The general rule is that cotton grown between any two concentrating points can be handled, at the option of the owner, at either of those two points, and it frequently happens that it can be handled at three or more concentrating points to equal advantage, in so far as the rates from point of origin to final destination are concerned.

(b) Cotton grown between Covington and Dyersburg, Tenn., a distance of 39 miles, can be concentrated at either Covington or Dyersburg for reshipment, and handled on a basis of the through rate from point of origin to final destination. In some instances there are exceptions to this rule, and cotton is hauled past one, and sometimes two, con-

centrating points to another, but for this there are usually good reasons, satisfactory to the trade.

(c) Cotton grown between Rosedale, Miss., Clarksdale, Miss., Helena, Ark., and Memphis, Tenn., with a few possible exception, can be concentrated at either of the four points under a reshipping rate satisfactory to the trade. And so on throughout the entire territory described in the 100-mile circle.

THIRD.—The concentrating points are fixed by the carriers through published freight tariffs filed with our State and interstate railroad commissions.

FOURTH.—There are no exclusive patents available for any warehouse system or plan of handling cotton. Any man, or set of men, can duplicate any plant that we could build, and could operate it.

It will be seen from the foregoing illustration that the co-operation of the carriers is necessary for the proper and economical warehousing of cotton.

It is my opinion that this, or any other, system of warehousing cotton must have, for the present at least, an incidental compression feature attached to it. That the warehousing and handling of cotton, on the whole, should be reduced to a scientific basis and conducted by those who can qualify by reason of age and experience as professional warehousemen and handlers of cotton. That the cotton trade should be interested in the warehousing companies, but that these warehousing companies should not be under the sole control of the handlers of cotton. This seems necessary in order to establish universal loan values to warehouse cotton receipts.

The warehouse company should be of sufficient financial strength to make it unnecessary to bond its receipts. There should be uniformity of rules and regulations for the government of its officers and employees at all points in the various States, and the officers and employees who are issuing negotiable or quasi-negotiable documents should be placed under a large bond, which bond should protect the company against any act, default or neglect on the part of the employee in the conduct of his business.

To make clearer my meaning: The rules of the company should provide that receipts for cotton shall be given only when the cotton is actually in its possession. That "good order" receipts shall not be given for cotton in a damaged condition. That cotton shall not be delivered until the outstanding receipt has been surrendered and cancelled, —and so on. Then, so draft your bond as to protect the company against any claims arising through failure of the officers or employees to comply with these rules.

Agents of transportation companies, banks and shippers should be furnished with the signatures of employees authorized to sign warehouse cotton receipts, coupled with a request that if receipts signed by other parties are presented such receipts shall be recognized as not genuine.

To a certain extent the warehouseman occupies the position of a banker. He is a depository of certain properties on storage, for which symbols are given, which symbols can be used in trade negotiations. No business takes care of itself, and, therefore, irregular periodical examinations and audits of each warehouse point should be made, when the stock of cotton should be checked against the outstanding obligations and discrepancies, if any, noted and reconciled.

The storage and handling tariffs should, as far as practicable, be uniform as between the warehouses located at the various points. The tariffs, however, will be affected by local conditions, and especially will you have to take into consideration the volume of business handled through each plant. In other words, a warehouse plant of the kind mentioned, constructed for the accommodation of 50,000 to 75,000 bales per annum, would serve an ideal warehouse business, from which maximum results at a minimum cost could be obtained. A warehouse plant of like character built for a business of 20,000 to 25,000 bales would, for obvious reasons, have different conditions to be considered in the preparation of a storage and handling tariff. But if one could own a chain of warehouses, nearer uniformity of charges could probably be maintained.

With such a system of warehouses as I have described, and the co-operation of the carriers, maximum service at a minimum cost can be obtained with a fair profit to the investors, and absolute protection to the staple and to other interests throughout the country handling the warehouse cotton receipts.

You are reminded of the fact that a large portion of the cotton crop, as it is now being marketed, is not held or stored by farmers, merchants, factors or others, but is sold direct to shippers as fast as it accumulates. There would be a material increase in the handling charges on such cotton without the concentrating and reshipping privileges, and these increased expenses come out of the producer in the following manner:

(a) An increased organization and expense to the shippers in taking up and shipping direct to mill points from the various small stations, which is estimated to be not less than an eighth of a cent per pound, or 62½ cents per bale of 500 pounds.

(b) Much of the cotton would have to be concentrated at reshipping points, anyway, in order to complete round lots of various grades, and in this case the freight to concentrating points would be wholly lost. This rate varies from 50 cents to $2 per bale, according to the distance.

Again, a reduction in the volume of business at concentrating points necessarily increases the per-bale cost of handling, and, incidentally, the handling and storage tariff. Then, the facilities for handling at the initial point of shipment necessarily must be increased, which results in an additional cost and charges for this service, as compared with the present methods of allowing the cotton to be placed on the cotton platforms, loaded into cars and shipped to concentrating points as it comes in.

The British Cotton Growing Association.

The efforts of the Association have resulted in a considerable extension of the area under cotton cultivation within the Empire, but progress is slow and halting. For example, the purchases in Lagos for March were 1,715 bales as compared with 3,400 bales in March last year, and 1,500 bales in 1908. Reports from Nyasaland are to the effect that the cultivation of cotton is increasing in popularity, the area this year having grown to 3,000 acres. And the decision of the British South Africa Co., to take 5,000 shares of the Association and to co-operate with it in the development of cotton growing in Rhodesia, must be helpful. But the Association is still a long way from the time when cotton production of the British Empire will go far to relieve Lancashire of its dependence upon America for its cotton supplies.

THE DEVELOPMENT OF THE CUTTING-UP TRADE IN THE SOUTH.

BY H. R. BEANE, ATLANTA, GA.

The necessity for volume of business, to enable a cutter to compete with national operators in this line, with lack of experienced labor, local prejudice and limited market, are its greatest drawbacks. The Southern cutter is forced to buy the majority of his raw material from Eastern commission merchants. My observation leads me to believe that this is brought about by two conditions,—lack of co-operation on the part of the mill men, and the fact that up to the present time the volume of his purchases has not been of sufficient importance to warrant consideration of the producer of the raw material. Observation also leads me to believe that these conditions are to some extent being done away with, and it will be only a matter of a short time until the cotton mills realize that one of their greatest assets, also one of their potent factors to success, is the encouragement of this industry, which will warrant them a continued demand for their product.

I am speaking here from personal experience, having been a cutter of medium-priced cotton piece goods, consuming an average annual yardage of from 300,000 to 600,000 yards. Our business has yet to be sought, with possibly one or two exceptions, by any producer of these goods in the South, yet 75 per cent. of our product has been made in Southern mills, and our business has been greatly sought by Eastern commission merchants. Some two years ago we began to buy some of our goods direct, and I am sure it has been to our advantage, from the standpoint of cost, and I am thoroughly convinced that were more concerted action taken, more consideration given on the part of the mill men, and encouragement given wherever deserved and needed, that it would be only a matter of a short time until the consumption of cotton piece goods which are produced in the South would be increased to an enormous extent.

Lack of information on the part of the producer, as to what purpose his product is used and who uses it, is to a large extent responsible for the inactivity on his part on this line. Positive I am that if a better understanding existed between the producers of the cloth and the manufacturer who cuts it up, their mutual financial conditions would be wonderfully improved. This is especially true of the cutters located in the 14 Southern States. The item of freight alone, to say nothing of the delay in transportation, which is, under the most favorable conditions, very poor in our country, is an item which, taken in general, amounts to an enormous annual volume, which cost is equally shared between the cutter and the producer.

In the matter of experienced labor, that primary trouble is to a very large extent being eliminated, and it has been solved by the importing of experienced people from large Eastern manufacturing centers to occupy the responsible positions connected with institutions of this character, but has never yet been a success in any plant until the education of home labor of sufficient volume for its maintenance has been perfected. The South holds the greatest natural advantage of any section of our country for the production of finished garments of medium qualities, which represent the great volume of business of this nature. The garments to which I refer are women's muslin underwear, men's fabric underwear, night shirts and pajamas, children's and misses' dresses, children's play suits, rompers, boys' shirtwaists and men's shirts. Up to a few years ago it was generally conceded that, on account of the water for laundry purposes, it was impossible to make a first-class sightly man's shirt outside of the East, but within the past two years this idea has been completely abandoned. This has been brought about by the improvements in the machinery used for this purpose, and to-day there are being made in the South, and sold throughout the United States, shirts which compare very favorably with any shirts manufactured in this country, and have succeeded in getting recognition from the most critical buyers that we have.

Men's fabric underwear, or what is sometimes called "athletic underwear," and which is, comparatively speaking, a new idea, is consuming annually millions of dollars' worth of piece goods, and I am sure that from inspection of all garments of this character made that 65 per cent. of this cloth is made in the South, while comparatively none is bought direct. This business, which is only five years old, is to-day, at the smallest calculation, speaking from a national standpoint, $40,000,000 industry, and the surface has only been scratched, for it is generally conceded by the students of men's wear that it is a revolution of men's underwear business. This is specially true of the Southern country, where summer underwear is used at least nine months in the year. The Southern cutter, as a national producer, has not yet appeared, nor will he ever be developed until he learns to take advantage of his natural opportunities and becomes broad-gauged enough to invade the large markets of the middle West and the East. There are numerous articles which could be manufactured in the South, where we have comparatively no labor troubles, at a saving in cost of manufacturing of from 15 to 20 per cent. over the congested manufacturing districts of the East in which are located all the big producers.

Our organization, the Peter Hill Co., of Atlanta, Ga., manufacturers men's neckwear, athletic underwear, night shirts and pajamas, and speaking from a comparative standpoint, is very small, but our product is being sold direct to-day in 27 States, and we have had no trouble in interesting the most critical buyers in any market in which we have undertaken to place our articles, and the expansion of our business has been limited only to our ability to produce. Children's and misses' dresses have, in the past few years, become quite a factor in the manufacturing business, and we have, located in the South to-day, a few plants of this character, all of which are in a very prosperous condition. The great volume of goods used in the construction of these articles is, of course, print cloths, although quite a few white goods are consumed. The business character of the people connected with this industry assured its success from the standpoint of development.

Another item which is claiming universal attention is children's rompers or play suits. These are constructed from cloths similar to the children's and misses' dresses, and like the industry to which I have just referred, is an idea which is only two or three years old.

Women's muslin underwear has never been successfully manufactured in the South, although it has been undertaken numerous times. The only plausible excuse which I can offer for this failure is the fact that the manufacturers of this line necessarily have to compete with plants which run upon an enormous scale, and the cost of production in the large plants is so much smaller than can possibly be ob-

tained in the small one that it has at all times placed them in the position where they have been unable to meet competitors on a price basis, and that has forced the inevitable result to which I have referred. On account of the great volume of business done in this particular line, I am thoroughly convinced that when manufacturers of experience and ability recognize the importance of this section, from a manufacturing standpoint, this will be the first large industry to claim their attention. It will necessarily have to be run upon a large scale, and it will have to have a national distribution, but, with such there can be no doubt of its tremendous success.

I have given you in this paper a general idea of the conditions that exist in the South, from the standpoint of the cutter, and I feel absolutely safe in predicting that his troubles from the standpoint of experienced labor, and other disadvantages to which he is subjected to-day, will in a very short space of time pass away, and when it does those now engaged will be working upon a larger and broader scale, and their success will stimulate and encourage new ones in our field. I look forward with a great deal of pleasure and anticipation to the day when the manufacturer will be located in close proximity to his raw material producer, when they will both recognize each other as a factor, in their success, when advantages too numerous to mention will present themselves and receive immediate recognition.

NOTES OF THE CONVENTION.

PRESIDENT LEWIS W. PARKER, while one of the busiest men at the convention, always had time to chat for a few moments with friends and meet new members. The success of the meeting was due in large part to his personality and his ability to arouse the enthusiasm of his audience. Mr. Parker is also a baseball enthusiast.

J. D. CLOUDMAN, Southern representative of the Draper Co., in Atlanta, Ga., attended the meeting with W. R. B. Whittier, treasurer Whittier Mills Co., Chattahoochee, Ga. Mr. Cloudman is one of the best known representatives in the Southern field. The proverbial cigar is as intimately associated with Mr. Cloudman as it is with "Uncle" Joe Cannon.

D. Y. COOPER, president of the Henderson Cotton Mills and Harriet Cotton Mills, Henderson, N. C., and who was elected president of the Association, is a great believer of associations, and his remarks advocating having the American Association represented in the International Federation met with general approval.

STUART W. CRAMER, Southern representative of the Whitin Machine Works, Taunton, Mass., and inventor of the Cramer System of Air Conditioning, was chairman of the committee on nominations, and also a member of the local committee. Mr. Cramer's two automobiles were in constant service during the convention for the pleasure of the members and visitors.

ARTHUR H. LOWE, treasurer Parkhill Mfg. Co., Fitchburg, Mass., was a prominent figure at the convention, and his remarks in the discussion of different subjects were given careful attention.

T. H. RENNIE, president Pell City Mfg. Co., Pell City, Ala., former president of the Association and a member of the board of governors saw few idle moments. He is considered one of the best mixers in the Association and always has something interesting to relate. Mr. Rennie made the reply to the address of welcome, and also entered the discussion on Excess Tare on Cotton.

RIDLEY WATTS, a member of the firm of Grinnell Willis & Co., commission merchants, New York City, and a member of the board of governors, made the presentation of the gold medal to President Parker. The Association is fortunate in having Mr. Watts on the board of governors.

S. B. TANNER, president and treasurer of Henrietta Mills and Florence Mills, Henrietta, N. C., and a member of the board of governors, favors the formation of suborganizations so that there will be some plan by which mills making similar goods can be brought together, where their interests are identical, and when their particular line of goods becomes depressed beyond a reasonable margin, they can easily agree upon a period of curtailment to suit the demand for their line of goods, regardless of what mills they do in other lines. Mr. Tanner is convinced that such a system if properly executed would certainly regulate the cotton goods market, and place goods on a parity with the raw material at all times, whether there are too many mills as some think, or whether the accumulation comes from other causes.

AUG. W. SMITH, president of the Union Buffalo Mills, Union S. C., and a member of the board of governors, was in attendance and was very much interested in President Parker's report of the Uniform Sales Note contract, and the rules of the cotton exchanges.

JOHN HILL, Atlanta, Ga., Southern representative of Lowel Machine Shops, Lowell, Mass., was in attendance with J. C. Saunders, Bonham, Tex., ex-president of the Texas Cotton Manufacturers' Association. Mr. Hill has made a special study of Texas as a cotton manufacturing State, and has found many advantages in this State of peculiar interest to textile manufacturers.

FRANK M. INMAN, of the firm of Inman, Akers & Inman, cotton, Atlanta, Ga., made the trip from Atlanta in his big Stevens-Duryea, which was in constant use in Charlotte during the convention. On the return trip, Mr. Inman brought several manufacturers back to Gastonia, Spartanburg and Greenville.

ALEX MCMILLAN, Southern representative of the Farbenfabriken Co., New York City, made his headquarters at the Charlotte office of the company. Mr. McMillan closed several nice orders during the two days session.

HARRY W. BUTTERWORTH, of H. W. Butterworth & Sons Co., Philadelphia, was the guest of A. H. Washburn, the Southern representative of this company.

D. J. DANKER, of Danker & Marston, Boston, Mass., was in attendance, as was also Mr. Marston. Mr. Danker reported an excellent demand for their sizing and finishing products in the South.

CHARLES PIERCE, Southern representative for the Universal Winding Co., Boston, Mass., with offices located in the Hotel Selwyn Building, had the conveniences of his office at the disposal of the members and visitors who were given the services of Mr. Pierce's stenographers. This was one of the many ways in which the hospitality of the citizens was shown.

STEPHEN C. LOWE, agent for John Hetherington & Sons, Limited, Manchester, England, whose headquarters are in Boston, Mass., made quite a hit with his songs at the barbecue. Mr. Lowe always furnishes some entertainment at the conventions.

FRANK B. COMINS, vice-president and treasurer of the American Moistening Co., Boston, Mass., was a familiar

figure at the convention. Mr. Comins received many congratulations upon the excellent exhibit of his humidifiers in Charlotte.

F. W. HOWE, manager of the Providence, R. I., plant of the Crompton & Knowles Loom Works, was accompanied by his wife, and was ententained at the home of E. T. Garsed, of Alexander & Garsed, the Southern representatives of Crompton & Knowles Loom Works.

JAMES M. CURRAN, of A. D. Juilliard & Co., New York City, commission merchants, arrived on Wednesday, stopping at the Hotel Selwyn.

E. T. FOWLER, of the Foster Machine Co., Westfield, Mass., was in attendance and found very little trouble making the occasion enjoyable both from a business and pleasure standpoint.

EXHIBIT OF TEXTILE MACHINERY AND ACCESSORIES.

Although no effort was made to have a regular exhibition of textile machinery and supplies at the convention in Charlotte, yet at the same time it offered such a splendid opportunity for the thousand or more manufacturers to examine the machinery that quite a number of concerns made special exhibits either in their Southern headquarters in the city, or in buildings secured especially for the display during the convention. Among those particularly noticed were the Whitin Machine Works, Taunton, Mass., Stuart W. Cramer, Southern representative. The company had an eight-head comber in working order in the Cramer Building with Elwin H. Rooney, master comber, in charge of the demonstration. A twenty-harness Whitin loom was on exhibition with A. K. Pratt, loom expert of the company, in charge. The automatic control for humidifiers which is a patent of Mr. Cramer's was also in operation and was working beautifully.

THE AMERICAN MOISTENING CO., Boston, Mass., had the exhibit that was used in Boston recently, which gave an excellent idea of the simplicity and efficiency of the Comins humidifier.

THE AMERICAN TEXTILE APPLIANCE CO. also brought its exhibit from Boston for this special occasion.

THE CARBOLINEUM WOOD PRESERVING CO. had an exhibit in the writing room of the Selwyn Hotel. Several samples of the work were shown, and a chart was distributed representing the coal tar family tree.

MACRODI FIBER CO. had an exhibit of its spools in the office of the Universal Winding Co.

JOHN W. FRIES, New York City, had an exhibition of the Hygrosso humidifier equipped with the new automatic control, which was located in the Piedmont Building in the offices of their Southern representative, John E. Schott. This automatic control is explained thoroughly in the New Machinery department of this paper.

CALDWELL-GILDARD CO., Fall River, Mass., had a demonstration of their electric stop motion on a loom in the office of the Charlotte Supply Co., A. H. Sawtell being in charge.

THE CHARLOTTE SUPPLY CO. gave souvenirs to the members visiting their house, consisting of a steel tape measure.

C. J. TAGLIABUE MFG. CO., New York City, represented by Fred T. Craig, exhibited the company's line of hydrometers, thermometers, automatic controllers for temperature and pressure and pyrometers, the exhibit being located in the registration office of the convention at the Academy of Music.

RICHARD B. THOMAS, Southern agent for Joseph Sykes Bros., English card clothing manufacturers, displayed a full line at his plant in the Tompkins Building.

BECKMAN CO., manufacturers of the Psarski Dyeing Machine, Cleveland, O., represented by F. I. Muir, exhibited samples of dyed materials which had been treated by this machine.

THE WHITIN COMBER EXHIBIT.

The special object of this exhibit was to demonstrate the usefulness of the Whitin comber in the reclaiming of good fibers from card strips and comber noils usually sold as waste. In preparing the waste cotton for this comber, 20 per cent. of card strips are mixed with 80 per cent. of comber noils and the same run through the pickers in the usual manner, and then carded on a card with a fancy. The card slivers are then run into a sliver lap machine which may have as many as 24 ends up. The laps thus made are ready for the comber.

The operation of the comber will reclaim from 60 to 75 per cent. of the waste, and the machine may be truly said to be a separator of fibers. The cotton thus reclaimed can be spun into yarn as high as number 40's. Examination of the comber noils made from this waste lap, shows only short fibers. By thus saving the good fibers in the waste, it is claimed that the cost of the cotton is reduced from ⅜ to ½ cent per pound. Another advantage of this comber is that it will run any staple measuring in length from 1 inch to 1¾ inches without changing any of the settings on the machine. This was demonstrated by exchanging one of the waste laps for a Sea Island cotton lap with a 1¾-inch staple and the machine continued in operation perfectly. It is claimed that in a comber mill 33 per cent. of the waste is saved which reduces the cost 2½ to 3 cents per pound on 15-cent cotton, and 5 cents and more on cotton costing from 20 to 30 cents per pound. By having eight heads, a high speed and a light lap, an increased production is obtained with a superior quality of work, owing to the fact that the fibers are more thoroughly treated by the combs on the half lap. The average lap for the Whitin comber weighs 400 to 450 grains per yard as compared with 700 to 825 grains per yard on other combers. The lap of waste weighs about 500 grains per yard. Elwin H. Rooney, who was in charge of the exhibit, had a great many samples of yarns up to 120's from the Majestic Mills, which were spun on Whitin ring frames from combed stock. He also had some yarns up to No. 80's combed, from the Mayes Mfg. Co., Charlotte, N. C., which were spun on ring frames.

Sea Island Cotton.

A report states that there were exported from the British West Indies for the calendar year 1909, 6,463 bales of cotton, containing 2,242,289 pounds; estimated value $556,885. This was a decrease of about 500,000 pounds from the preceding year. From the best information obtainable, the crop for 1910 will show a still further decrease. The cotton was nearly all Sea Island. The cultivation of Sea Island cotton first became a factor in 1902. There was a steady increase in acreage up to 1907, when it reached its maximum. Since that year there has been a decrease in acreage in nearly all the islands.

National Association of Hosiery and Underwear Manufacturers.

CONVENTION AND EXHIBITION IN PHILADELPHIA—TARIFF WAS FREELY DISCUSSED—EXHIBITION WAS HIGHLY SUCCESSFUL—GARNETT ANDREWS ELECTED PRESIDENT.

The National Association of Hosiery and Underwear Manufacturers held their sixth annual convention and fifth annual exhibition in Philadelphia, Pa., beginning May 23rd and lasting through May 27th. The growing importance of the Association was clearly demonstrated by the large attendance at all of the meetings and the exhibition, the registration books showing nearly 700 members and visitors.

The meetings of the Association were held in the convention hall of Hotel Walton, while the exhibition occupied Horticultural Hall.

SESSIONS ON TUESDAY.

The convention was opened on Tuesday morning, May 24th, shortly after 13:30 by President Fred W. Simons, to which the Hosiery, Underwear and Fancy Knit Goods Manufacturers were invited, including members, associate and non-members. President Simons introduced Hon. John A. Reyburn, Mayor of Philadelphia, who delivered the address of welcome, in which he stated that the Department of State at Washington can not be trusted to fix our tariff schedule. "From President Taft down to the lowest clerk," said he, "there is not one of them who ever manufactured a dollar's worth of goods in his life. I want to say," continued the Mayor, "that manufacturers in this country ought to be favored and helped by legislation, for they are the real men in this country to-day. The state department ought not to make the tariff here; the manufacturers who understand it should work it out for us."

GARNETT ANDREWS, NEWLY ELECTED PRESIDENT.

Then followed the reading of the minutes of the 1909 convention after which President Simons delivered his annual address. This was devoted almost entirely to the discussion of the tariff, in which President Simons brought to task those who would lower the duties on knit goods, and he was generous in his praise of Speaker Cannon for the fight he has made in behalf of knit goods manufacturers. President Simons also took occasion to reprove certain magazines who had lately published articles tending to show the general dissatisfaction of the tariff, and who at the same time published advertisements of textile industries to the amount of $80,000 a month. He stated that manufacturers could prevent the publication of such derogatory articles by withholding business from such magazines.

Secretary-Treasurer C. B. Carter then delivered his report, which showed that the Association was making good progress and its usefulness was becoming more and more apparent every year.

When the report of the legislative committee was called for, C. H. Brown, chairman of the committee, moved that the report be submitted at the executive session on Wednesday.

Chas. H. Porter of the New Bedford Textile School, New Bedford, Mass., was the next speaker. He declared that it was possible to make young men practical mechanics for manufacturing knitting machinery. He spoke of the technical advantages of the equipment of the textile school, and of the success which had attended its efforts.

The afternoon session was divided into two divisions, one for the hosiery manufacturers, and the other for the underwear manufacturers, the latter meeting in the convention hall. These were executive sessions especially arranged for members, although non-members were allowed to attend upon application to the Secretary-Treasurer.

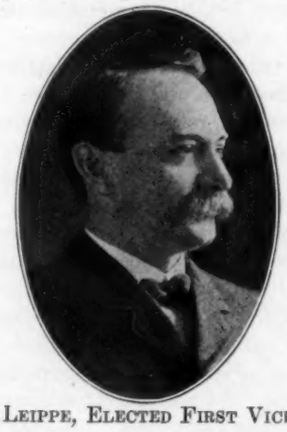
SESSION ON WEDNESDAY.

The Wednesday morning session opened with preliminary business, after which a paper on "Strike Insurance," by Fred D. Crichton, of the Employers Indemnity Co. of West Virginia, was read by O. Howell in Mr. Crichton's absence. The paper dealt with the subject of indemnity for manufacturers in case of strikes, the assertion being made that such insurance did more to minimize the possibility of strikes probably than any other factor connected with the manufacturing industry.

The next paper on "Dyeing of Hosiery" was presented by Dr. C. Fischer, of the Berlin Aniline Works, New York City. The latest methods of dyeing hosiery were discussed in the paper, and some of the many difficulties encountered were commented upon, with possible remedies.

When the meeting was thrown open for general discussion, the subject of "Net Weight Yarns" first claimed attention. There was a difference of opinion as to the desirability of purchasing yarns on this basis, the different members expressing their personal views on the subject. During this discussion the question arose as to whether the knitters present had been able to buy Southern yarn on a net weight basis. The general opinion was that although it was difficult to obtain such contracts, yet at the same time if this point was insisted upon, the buyer could secure the necessary yarns on the net weight basis. The majority of the members seemed convinced that buy-

ing by net weight would be the more satisfactory way, because in that case the knitter would know precisely what the delivery would amount to, and it would be an easy matter to discover any errors that might occur. Advocates of this kind of contract held that 2 per cent. did not cover the tare in many instances. A question from the chair, as to how many present were buying on the net weight basis, was answered practically unanimously in the affirmative. It was further pointed out that when yarns were sold on the net weight basis, the yarn dealers in practically every case charge an additional quarter cent or



CHARLES E. LEIPPE, ELECTED FIRST VICE-PRESIDENT.

half cent a pound. Experienced knitters stated, however, that even with the addition it was an advantage over the 2 per cent. allowance for tare generally made.

An interesting point brought out in opposition to the net weight basis was that the increased expense of calculating net weight would counterbalance the advantage of this method, owing to the additional duties required to secure correct results which would necessitate the employment of a special weigher. The matters of uniform weight paper and uniform sizes of tubes and cones were urged as a means of simplifying matters and obtaining uniform tare.

CREDIT BUREAU.

The discussion of the credit bureau department was opened by President Simons, who is the originator of this innovation. He stated that he had been working for this department for the last two years and was convinced that it would be of great service to the members of the Association. There are at present 150 members of the Association registered in the Bureau and who make returns. It is predicted that this Bureau will prove of immense value to the members who take advantage of it.

The report of the Legislative Committee of which C. H. Brown was chairman, and which report had been held over from Tuesday's session was next read, and was regarded as one of the most important features that came before the Association. Chairman Brown who has been stationed at Washington in order to be in close touch with legislation affecting the knit good industry, reviewed the work of the committee before the passage of the tariff law and since its passage. Mr. Brown paid a tribute to the late W. F. Waring, who was chairman of the committee previous to his death, and who was so active in representing the interests of the knit goods industry with the tariff commission. The statistical work of the committee since the passage of the new tariff law was explained fully. The other members of the committee were: Joseph S. Rambo, W. Park Moore, Garnett Andrews, F. L. Chipman, D. F. Harrington and G. D. Horst.

SESSION ON THURSDAY.

The morning session of Thursday, May 26th, closed the business portion of the Convention and was confined principally to the reading of reports, election of officers and the appointment of committees.

The report of the Sub-Associations was presented by S. H. Weihenmayer, Hagerstown, Md., who stated that it had been found impossible to secure a large attendance at the meetings of the sub-associations, and he felt that more benefit could be derived by having frequent meetings during the year at various points. Mr. Weihenmayer emphasized the practical value of these association meetings by declaring that the members of the various sections had been enabled to get closer together through these meetings than in any other way, and have exhibited the spirit of co-operation in a most practical way by comparing their price lists and samples, which is considered the only practical method of solving many of the difficulties that arise in the business.

A resolution on net weight yarns was then introduced by Mr. Weihenmayer, the substance of which was that all dealers and spinners of yarns should be urged to sell their product on this basis and that the Secretary be instructed to write all such factors. The executive committee was entrusted with the work of fixing the date of next year's meeting and they will make their decision at an early date.

After discussing the matter of legislative work in connection with the tariff committee, a motion was made to relieve the tariff committee of the association of the increased dues paid by the majority of the committee, based on the volume of their business. This was in view of the proposition being made to the association that these men

EDWARD BLOOD, SR., ELECTED SECOND VICE-PRESIDENT.

would relieve the organization of any expense attaching to the prosecution of their work in the future. The entire matter was left to the Executive Committe with power to act.

ELECTION OF OFFICERS.

The next business before the convention was the report of the nominating committee, which was accepted, and the following officers were declared elected for the ensuing year:

President—Garnett Andrews, Treas., Richmond Hosiery Mills, Rossville, Ga., and Chattanooga Knitting Mills, East Chattanooga, Tenn.

First Vice-President—Chas. E. Leippe, Reading Knitting Mills, Reading, Pa.

Second Vice-President—Edward Blood, Sr., John Blood & Bro., Philadelphia, Pa.

Secretary-Treasurer—C. B. Carter, Philadelphia, Pa.

Executive Committee—Robert C. Blood, Philadelphia, Pa.; J. D. Berger, Schuylkill Haven, Pa.; J. Ogden Wells, St. Joseph, Mich.; W. F. Carr, Durham, N. C.; Joseph Feldenheimer, Philadelphia, Pa., and W. Park Moore, Philadelphia, Pa.

Mr. Andrews in accepting the President's chair expressed his appreciation of the high honor paid him, and then outlined briefly the different matters of importance that would come before the Association for consideration and action, among them being the tariff, high cost of living, child labor legislation, and others.

A resolution was passed extending a vote of thanks to Messrs. Payne and Fordney for their support of the interests of the textile industry, as particularly exemplified in their recent speeches in Congress. A resolution was then passed endorsing an International Pan-American Exposition at New Orleans in 1915. Another tariff resolution endorsing Senators Payne and Aldrich was then passed, and then after a vote of thanks to the retiring president, Mr. Simons, for his efficient work during the two years of his administration, the meeting adjourned.

A banquet was held on Thursday evening at the Hotel Walton, President Andrews acting as toastmaster.

Sketch of Garnett Andrews.

Garnett Andrews, the newly elected president of the Association, is vice-president and general manager of the Richmond Hosiery Mills, Chattanooga, Tenn. He was born September 15, 1870, in Washington, Wilkes county, Ga., and lived in Yazoo City, Miss., until he was eleven years old, his father being partner in the law business of John Sharp Williams. Mr. Andrews was educated partly at the Virginia Military Institute, Lexington, Va., and partly at the Worcester Polytechnic Institute, Worcester, Mass.

In 1896 he organized the Chattanooga Knitting Mills, with only $4,500 capital. In 1898 the mill was enlarged to $75,000 capital, and moved to a suburb of Chattanooga at Rossville, Ga. In 1901 they acquired the Mathis & Davis Mills, Boyce, E. Chattanooga, Tenn., which has been operated since under the same management. The Richmond Hosiery Mills, of which Mr. Andrews is vice-president and general manager, now has a capitalization of $200,000, employs some 600 people, and has a pay roll of $175,000 per annum. Their main plant is at Rossville, Ga., where they have 300 knitting machines, and 5,000 spindles, doing their own spinning. The Mathis & Davis plant at Boyce, E. Chattanooga, Tenn., has 100 machines, and employs about 150 people. The Richmond Hosiery Mills also has a plant at Dayton, Tenn., which has recently been established.

Mr. Andrews is also manager of the Rockwood Mills at Rockwood, Tenn., where very fine gauge seamless hosiery is manufactured, and is president of the Acme Box Co., of Chattanooga, vice-president of the Manufacturers' Association, a director of the Chattanooga Gas Light Co. The mills of which Mr. Andrews is manager represent the largest output of any in the South. He is one of the foremost manufacturers of hosiery in the country, and is almost as well known in the East, amongst hosiery manufacturers, as he is in the South.

PRESIDENT'S ADDRESS.

BY FRED W. SIMONS, PHILADELPHIA, PA.

I want to say to you a few words upon a subject of which we are all heartily sick and tired, but the importance of which looms so largely on my mind that I should feel guilty if I failed to avail myself of the opportunity of speaking, while yet my words are clothed with whatever importance the office with which you have honored me may confer upon them. I refer to the attitude of the country in relation to the tariff question. I am not going to anticipate the report of your tariff committee, and if I am pessimistic, it is not because I wish to be so, but because history shows that the business of the country was never in a satisfactory condition during times of tariff uncertainty, and threatened revision; and as I can see no prospect of cessation of tariff agitation, the outlook does not present to my view the hopeful prospect it otherwise would do.

I would like to state that in dissenting as I do from the tariff policy of the national administration, and if it is true that Mr. Taft is carrying out Mr. Roosevelt's tariff policy, then also from that of the previous administration, I do so with great respect. I have always been a great admirer of Mr. Roosevelt, and am so on record in this Association, and I am confident Mr. Taft is inspired by motives of patriotism. But I differ from them, and if I exaggerate the importance of protection, I do so conscientiously, and stand ready to defend my position by giving a reason for the faith that is in me. There is a tremendous responsibility resting upon the men who are clamoring for lower duties on imports.

If this country, under a policy of protection, has within a few decades advanced from comparative obscurity to a foremost position among the nations, if from being comparatively poor she has become enormously rich, if her people are the best-conditioned in the world—and no honest, competent observer will deny that they are—why abandon the policy under which this great progress has been accomplished?

The tariff reformers profess to be animated and inspired by the desire to benefit the ultimate consumer, and to protect him from the greed of the producer; but the producer and the consumer are one. Show me a consumer who is not a producer, and I will show you a parasite. I use the word in no offensive sense, for there is no need of non-producing labor, but the fact remains that it is non-producing and must draw its substance from the producer. Therefore, whatever affects the producer, either for good or evil, affects the non-producer likewise.

The tariff reformers profess to be scientific protectionists, but their very definition of what constitutes proper protection carries with it its own refutation; the assertion that the protection afforded should be equivalent to the difference in cost of labor here and abroad is at once an admission that protection has enabled American labor to secure higher wages than foreign labor, and a protestation that it ought not to be allowed to further increase its advantages.

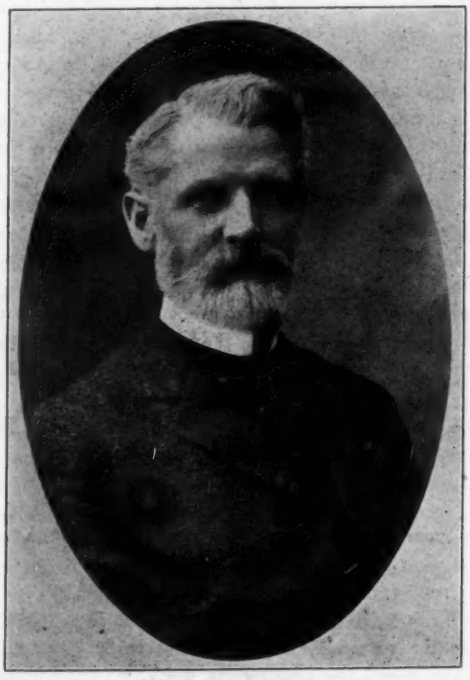
Let me direct your attention to what I conceive to be the very unfortunate position occupied by some three

hundred thousand American citizens. Of course, in such a large body as that you will always find some black sheep, but, taken as a whole, I believe that the men I refer to are not second in ability or in character of their manhood to any other class of men in existence; and yet by a great part of the population of this country the captains of industry, great and small, are regarded as so many grafters, living by extortion and fattening on the vitals of the oppressed and down-trodden people.

It is a fact easily capable of demonstration that neither the capital nor the labor engaged in manufacturing is overcompensated, but who can wonder at the unsatisfactory relations existing between capital and labor when every demagogue in the country is shouting "stop thief" after the manufacturer?

NEED FOR PROTECTIVE TARIFF.

The idea that protection is a special advantage given



FRED W. SIMONS.

to the manufacturer at the expense of the nation is wrong. If that is not so, then protection in any form is wrong, and the producer is guilty of graft as charged.

Are the three hundred thousand manufacturers in this country grafters? Are they and their six or seven millions of employes recipients of the charity of the nation? They are not. They receive no better compensation than those engaged in commerce or agriculture, and they derive no greater benefits from the protection afforded by duties on imports.

It is a fact palpable to the most observant, that the millions of working people who are employed in the manufacturing industries are no better compensated and no better conditioned than those employed in commerce or agriculture. It is a fact that the manufacturers of this country make smaller profits than the merchants, and have not accumulated so much money.

Both the farming interests and the trading interests are, and have been, more prosperous and better compensated than the manufacturing interests.

From the time of the passage of the Dingley Bill to the recent panic, the manufacturing interests were steadily employed, and were on the average very prosperous, but were they more prosperous than the farming interests? Consider the prices that farmers are getting to-day as compared with fifteen years ago; consider the stupendous total of the mortgages they have paid off in the interval; consider the tremendous increase on the value of their properties, and then please tell me by how much the manufacturing interest have had the best of the game?

I don't know that I can quote any authority for the statement that the manufacturers of the United States are to-day working upon a smaller margin (percentage) of profit than the manufacturers of any other great nation in the world; but I firmly believe such to be the case, and that it has been brought about by the steadiness with which they have been running their plants to full capacity during the operation of the Dingley tariff.

There can be no more valid argument in favor of a reduction of the tariff that is not based on the assumption that the domestic producer is making an abnormal and unjust profit; and the producers, at any rate the manufacturers, are not making such a profit; to quote the exception is only to prove the rule.

Moreover, the government is in possession of the information, and is now acquiring information of the most authentic and reliable character, from which it can readily satisfy itself of the truth in regard to the matter. I refer to the figures furnished by all manufacturers of the country to the Census Bureau at Washington. These figures are furnished to the government in confidence, under the assurance that they will be used only for statistical purposes, and the manufacturers have absolutely no reason to make false returns. They prove conclusively that the manufacturers do not make excessive profits.

The figures of the census now being taken are, of course, not yet available, but there is no reason to believe they will indicate any greater profits for the manufacturers than those of the last census. Referring to Bulletin No. 57 of the Department of Commerce and Labor on page 25, you will find Table 9 a comparative summary of all the manufacturing industries divided into 14 groups. It gives the number of establishments, the capital employed, the number of salaried officials, and the total amount of their salaries. The number of wage earners and their total wages, the miscellaneous expenses, the cost of materials, and the total value of the products.

Taking the grand total, the figures indicate that the cost of production falls short of the value of the product by a fraction of over 11 per cent., but the body of the report (page 11) states that the census data should not be used to compute profits, as there are many items of expense, such as allowances for depreciation of plant, bad debts, etc., that are not considered in the census schedule.

TEXTILE PROFITS ARE SMALL.

Now, without taking into account the "bad debts, etc.," referred to, and assuming that the only item of expense not enumerated in the census figures is depreciation, I submit to you or to any one competent to form any conclusion in the matter, that a reasonable charge for depreciation would make the government's figures show that the average profit of the American manufacturers is the smallest profit possible that is compatible with the continuance of the prosperity and progress of our industries; and it is not all available for disbursement at that, for, if the manufacturer is to continue in business, he must make provision

not only to maintain the efficiency of his plant, but also to increase it by the purchase of all improved machinery and appliances, so that even his net profits are not all available for disbursement.

I have spoken to you only of the gross figures covering all branches of the manufacturing industries. Some of the groups of industries show up better than others, of course, but I think few, if any, show excessive profits. Taking your own business, that of hosiery and knit goods, the government's own figures indicate a gross profit of just about 10 per cent., out of which you must provide for depreciation, bad debts, etc. Passing by the bad debts part of it, I say that if the government would appoint a competent commission to ascertain the average approximate depreciation of American knitting machinery, and then apply those figures to the figures already in its possession, it would prove that the net profits of the hosiery and knit goods manufacturers do not exceed 2½ or 3 per cent. of the value of their product.

The manufacturers of the United States are not grafters, and if Congress is not satisfied that such is the case, then the way to determine the question is to ascertain from the information already in its possession what the profits of the manufacturers are, instead of undertaking the utterly impossible task of determining "the permanent differential between the cost of production here and abroad."

There is no such permanent differential. There is no such thing, even, as the permanent cost of manufacture, either here or abroad, any more than there is such a thing as the permanent cost of growing wheat or corn. The manufacturers is as much dependent upon favorable business conditions as the farmer is dependent upon favorable weather. You know, and all competent manufacturers know, that a plant when run to its full capacity may show a handsome profit, even at a price that would net a loss if the plant was run only 75 or 80 per cent. of its capacity. The farmer has this advantage, however, that when he gets poor crops he usually gets better prices, whereas when the manufacturer's output is curtailed by slow demand, and his cost of production is increased in consequence, he usually has whatever profit he had before taken away from him.

The government is in a position to obtain from the census returns all the reliable information in regard to cost of production that would be of service to it in determining whether or not any particular industry was extorting excessive profits.

The real cost of production is obtainable only after the business has been done, and that from the profit and loss account—the balance sheet. Any costing figures that are not sustained by the profit made or the loss sustained are inaccurate.

For these reasons I disapprove of the creation of a tariff commission with powers and duties as defined by President Taft. If Congress needs assistance at all, it needs assistance of a commission of competent accountants, men who do not get rattled by big figures, but who can draw up a big balance sheet and then prove that it is a true one.

The manufacturers of the country have been abused and maligned and slandered long enough, and the charge made against them is definite enough; why not take the bull by the horns and prove the charge is false in the only manner in which it is possible to prove it is false, and that is by a complete "show down"?

They say we have stacked the cards. Throw them on the table face up, demand an inquiry by a commission having all the powers of an inquisition, not for the purpose of exposing the private business of the individual manufacturer, but for the purpose of finding out what percentage of the total value of the product of each industry goes to the manufacturer as a profit.

I would like to call your attention to the fact that some magazine editors are playing the manufactures for a "soft thing."

Some time ago, one of them published an article purporting to prove, from the figures of the last industrial census, that all labor received was 18 per cent. of the value of its products. I answered that article the best I was able, pleading with the editors to publish my letter, not only in the interest of justice, but also in the interest of labor. They refused to do so.

Last month, one of the magazines published an attack on Speaker Cannon. It was a brutal thing, just a mass of venomous abuse such as no just man would write, and no just printer would publish. I noticed that the same issue contained several full page hosiery advertisements, I believe from members of this association, and I wish to say, that if manufacturers of the country used proper discretion in placing their advertising, there would not be a magazine editor in the country who did not conscientiously believe that Uncle Joe was the finest old gentleman that ever wielded a gavel.

All I can say is that if the manufacturers are going to continue to pay scores of millions annually (it may be hundreds of millions for aught I know) to help their enemies to destroy them, then I hope they will get all the tariff reform they are paying for.

REPORT OF SECRETARY-TREASURER.

BY C. B. CARTER, PHILADELPHIA.

The year's work, that is now drawing to an end, has been of such a nature that it will not require an extended report from your Secretary-Treasurer, inasmuch as the columns of the Knit Goods Bulletin have kept you fully posted as to the progress of Association work. Instead of reviewing in detail the past year's work, we shall endeavor to summarize what has been attempted and accomplished, and suggest further lines of work that is within the province of our Association to perform.

In looking backward and considering our early struggles as an organization, we think you should feel considerably elated at the progress that has been made. The nature of business, the personnel of many of the manufacturers, and the conditions of distribution that have been forced upon the manufacturers, have woven a chain of difficulties that have been extremely hard to harmonize. In fact, we have not yet accomplished everything that was originally planned to be performed, but greater progress has been made than anyone in the beginning imagined; and with the large and representative membership we now control, and the prestige of our successful achievements in the past, it is only a question of time until all our plans will have been accomplished, and other avenues of usefulness will be opened to which we may direct our energies. Our present membership among the hosiery manufacturers now embraces over 85 per cent. of the hosiery production of the United States. The underwear and fancy knit goods representation is smaller but yet important. With the reputation

our organization has achieved by reason of the success that has followed our efforts, it is only a question of time and attention to insure the membership of as large a representation from the underwear and fancy knit goods manufacturers as we now possess in the hosiery line. Our organization in name and scope is of a national nature embracing all branches of the knitting industry, and it is the intention of the officers to make the Association the strongest trade organization.

The report from your President, as well as the reports from the Executive and Legislative Committees, will be of so comprehensive a nature, as to fully convince you of the Association's activity. We do not claim not to have made mistakes, or that all lines of work we have pursued have achieved success. It has been the policy of your officers both this year and previously, to do things when it was felt there was a demand or a reason for work. If our judgment was amiss, or the power and influences back of the Association was insufficient to bring success, we felt it was more honor and credit to have tried and failed, rather than not have tried at all. We have felt, and past experiences fully show, that our mistakes have only been stepping stones to success.

SUB-ASSOCIATION.

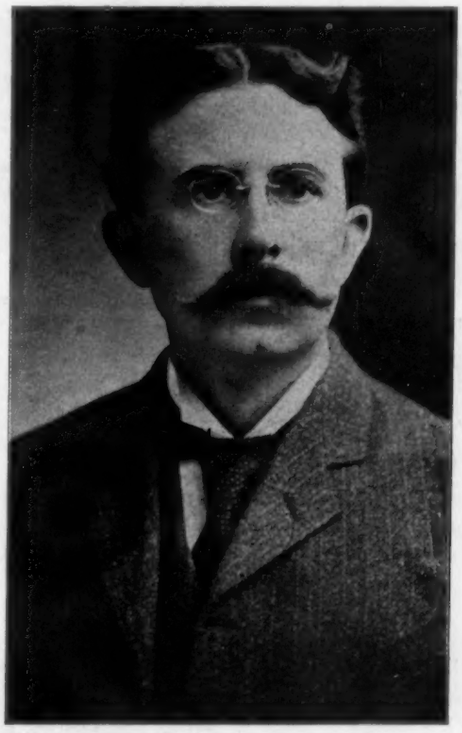
What was originally deemed a very essential element of Association work, was that of the formation and operation of what was termed Sub-Associations the subsidiary branches being composed of manufacturers making the same class of goods. Quite a large amount of the Secretary-Treasurer's time during the past year has been devoted to efforts to bring about a better understanding and a closer affiliation among manufacturers, but it is not to be regretted that success has not followed our efforts as has been supposed, or as should be expected. Possibly the demoralized conditions confronting knitting manufacturers in the distribution of their production has been largely responsible for the failure of these plans. Some manufacturers were of the opinion that in absence of orders for immediate or future delivery, they should either curtail their production or close down their plants. Others felt that it was essential that their plants be kept intact even though it was necessary to secure business upon an unprofitable basis, while others were convinced that it was to their advantage to run their plants full, accumulating stock to supply the demand when the market opened. The first class of manufacturers could not see their way clear to do business except on a profitable basis, and the wisdom of such action is very apparent, and it would be good policy for others to pursue the same plan. The second class of manufacturers were perhaps right in a measure, provided the period was of short duration, otherwise their operating capital would be absorbed and they would face bankruptcy. The third class of manufacturers would succeed if they had ample capital or could borrow sufficient money to tide them over until a healthy market materialized, provided that in the meantime cut prices made by the second class of manufacturers had not reduced the market to an unprofitable basis. The general impression seems to be that when business is brisk and orders plentiful, the functions of Sub-Association, may be successfully exerted, but in periods of depression, it is absolutely impossible to accomplish the measure of success necessary for the continuance of these sub-divisions of the industry.

UNIFORM COLOR BOXES FOR KNIT GOODS.

This subject was discussed to some extent at our last Convention, and naturally had received the attention of manufacturers generally for a good many years past. The manufacturers are not only ones who realize the unsatisfactory and expensive details in connection with this branch of our business. The box-makers, themselves, concede that it is an abuse that should be corrected, and feel that it is within the province of the manufacturer to accomplish the needed reforms.

Our members' attention has doubtless been brought to the interesting article published in the October issue of the Bulletin by Charles I. Beck of the Charles Beck Co., who are large dealers in not only box machinery, but also of box material. The article is not very long and we feel that the subject matter is of sufficient interest for your consideration at this time—at least some of the salient points brought out by Mr. Beck.

Owing to the fact that the margins of profit in the manufacture of hosiery, underwear and other knit goods seems to be diminishing, it behooves the manufacturer to care-



C. B. CARTER.

fully guard every avenue of expense or of operations entailing added labor or material. It is unnecessary for us to elaborate on the merits of demerits of this proposition. There are some manufacturers who consider that their ability to supply on short notice any color or size box, is a valuable asset for their own particular advantage and doubtless would not entertain a proposition to simplify this feature of their business. There are other manufacturers who are on the fence who would welcome a practical and well directed plan for alleviating themselves of this burden. There are other manufacturers who are bitterly opposed to granting the buyers' demands for special packing, and it lies largely with this last class to supply, as it were, the sinews of war to those not fully convinced as to eliminating this expense and trouble. Just what plan may be devised, and how same should be operated, is a question that should be fully discussed at this Convention, and the mem-

bers should cheerfully voice their sentiments as to their views on this important subject.

MILL OR JOBBERS TRADE MARKS.

This question is very closely associated with the subject of uniform color boxes, and possibly the two could be worked together more advantageously than by taking up each subject separately.

While other industries may or may not have suffered to the extent as the knitting industry in the inroads made by the buyers on the manufacturer's reputation, yet organizations representing other industries have apparently more fully realized the growing tendencies and have endeavored to stem the tide.. We all know the great success that has followed certain manufacturers who have copyrighted their trade marks, and whose goods are marketed under their own name. Whether or not it is possible or practical for many other manufacturers to lay the foundation for a business reputation and probity which will prove a lasting and profitable legacy to their heirs, is a question that merits mature consideration. The initial expense in establishing a name and reputation is, of course, an item of no mean importance, but it would seem that results would unquestionably justify the ways and means required.

NET WEIGHT YARN MOVEMENT.

Regardless of statements to the contrary, as some yarn salesmen and spinners are endeavoring to impress upon the knitting manufacturers, the net weight yarn movement is progressing very satisfactorily. While we do not claim that every knitter is receiving or even asking for "net weight" terms, yet the number of manufacturers who are not only insisting upon purchasing on this basis but are securing all their requirements on these terms, is constantly increasing. There's a reason why, and if those knitters who do not keep accurate records of every case of yarn received, would adopt some plan of this character, they would soon realize the benefits of "net weight" terms.

It must be remembered, however, that the spinners have fully realized the justice of our claims, and while they may not be actually selling upon the terms desired, yet they are giving better value than ever before—that is, the tare is nearer two per cent. Many of the yarn representatives who are not selling net weight, freely confess that the agitation has forced the spinners to cut down the tare. This movement, for which the Association should receive full credit, has been the means of saving the knitting manufacturers thousands of dollars. A conservative estimate would be such a large figure that we fear some of our members might make insinuations and result in too many inquiries as to where they could secure the same brand.

CREDIT BUREAU DEPARTMENT.

The time this report was prepared, your president had not taken us into his confidence and advised us fully as to the subjects discussed in his report, and thinking possibly he may be a little timid in telling about the Credit Bureau Department, of which he is the father, we feel that you are entitled to know of its parentage, and at the same time to have conveyed to you the high value that is placed upon this department of our work by our members—at least by those who have been so fortunate as to tender their co-operation and support. Our members have unquestionably given unbiased or at least their true experience from present and past dealings. The first issue of the rating books embraced the experience and opinions of 110 of our members; since that time about 50 other members have promised their co-operation and support, most of whom have already sent in their reports, and we are conservative in the estimate that the second issue—to be published the latter part of June—will embrace the actual experience from 175 to 200 members. There is no mercantile or credit agency that can supply so wide and comprehensive information at any price. Our members get this information free. Just think of it! And yet some knitters state the Association is no good and even some of our members are slow in paying their dues.

Ever since the Association was organized, Mr. Simons has had this Credit Bureau in view, but it was not until this year that he felt the organization was large and strong enough to put the same in operation. Full credit is due him for his plans which have carried so successfully, and this Credit Bureau will be a lasting testimonial and monument of his administration.

FINANCIAL STATEMENT.

It is very gratifying to your officers, and particularly to the Secretary-Treasurer, to again report that the Association is out of debt and has a cash surplus—though small. It has been a laborious task in accomplishing this result, particularly as no assessments were made on the members nor were they requested to contribute towards payment of deficit. Our ability to keep out of debt and at the same time successfully carry on the extensive work during the year, has been made possible only through the sympathy, co-operation and support of the firms, companies and individuals who have advertised in the Knit Goods Bulletin, the Official Program and the Exhibition. The Association wishes to tender to these, our friends, our most sincere thanks.

In conclusion, your Secretary-Treasurer wishes to express his sincere thanks to your President, the officers and individual members for the many courtesies shown and the assistance given. He has by no means grown weary of the work intrusted to his care from year to year, and is anxious to continue to serve you, believing that preservance will not only enable us as an Association to accomplish that for which we are striving, but that it will also materially assist him in reaching still higher attainments in the line of Association work.

REPORT OF EXECUTIVE COMMITTEE.

To the members of the National Association of Hosiery and Underwear Manufacturers:

Your Executive Committee, composed as you know not only of the six members of the Executive Committee, but also of the other officers and advisory board, have had frequent conferences during the past year. Usually different members of the Legislative Committee have also attended, thus broadening the source of information, suggestions and advice on whatever questions were brought up for consideration. The year's work has been performed in a very harmonious manner, and if our plans have not always carried successfully, it has not been through inattention, or been brought about by conflicting opinions and biased inclinations. It must not be understood, however, that there has been no difference of views, for such has not been the case, but in working for the general good of our industry, petty questions referring to the individual manufacturer, have been relegated to the background, with the result that the general interests have been considered rather than the rights and privileges of the few.

ASSOCIATE MEMBERS.

Probably the most important step that has ever been taken by our Association, excepting of course the Credit Bureau Department which is fully discussed in the Secre-

tary-Treasurer's report, was that of permitting yarn, machinery, supply, and other concerns who cater to the knitters' patronage, to join the Association as associate members. The question has been asked, why was provision made for associate members, and what advantages are to be derived from associate membership?

To the first question, we answer that many of the manufacturers of knitting machinery, yarn, supply and accessories, have always taken a lively interest in association affairs, and have not only been willing to give their moral support to our work, but have also been anxious to help financially in further increasing the Association's sphere of usefulness. In order to tender this support, they thought that provisions should be made for receiving contributions from the "knitters' friends," and naturally felt that they in some way should be recognized and identified with the Association more closely than as mere "camp followers," hence the change in our Constitution and By-Laws providing for associate membership.

The second question—advantages—the greatest benefits redound to the Associate members, indirectly through the increased prosperity and purchasing powers of the knitting manufacturers, which is absolutely the result of Association work. Then too, as the Association's headquarters is the recognized head and source of information for the knitting manufacturers of the country, inside information of prospective purchasers that they may be diverted to those in a position to supply their needs, will prove productive of direct results.

Another direct advantage of associate membership has been made possible by the recent ruling of our officers that the annual dues paid to the Association each year, will be applied as a credit toward advertising in the Knit Goods Bulletin and Official Program, or as a part payment for space in the annual exhibition. This feature alone should cause every eligible concern to at once apply for associate membership.

What further results will accrue to associate members through their co-operation and association with the active members of our Association, will depend largely upon the co-operation and support they give to the work. There are great possibilities for good, however, and the rapid progress that is being made in interesting them in the Association, clearly shows they believe it our work, and feel that the direct and indirect benefits will amply reward them for the time and expense devoted to this cause.

RE-ADJUSTMENT OF ANNUAL DUES.

The resolution passed at the last annual convention, changing the basis of fixing the rate of annual dues, has caused much less confusion and criticism that was at first predicted. Possibly half-a-dozen members resigned on this account, most of whom will be brought back into the fold as soon as they realize the increased field of usefulness that has been made possible through new channels of work that have been made possible by the Association having proper funds to carry on the work. The benefits of direct monetary value through the Credit Bureau Department alone, will many times offset the additional amount of dues that is being paid by the larger members.

The additional funds provided by this increase of dues, has enabled the Association to employ our assistant secretary, C. H. Brown, who is also acting as chairman of our Legislative Committee. Owing to the serious situations at Washington in connection with the tariff, he has been compelled to spend the greater part of his time there. He has also been closely in touch with the various ports of entry and has successfully stopped much undervaluing of hosiery importations, work of exceeding value as is clearly understood by those in close touch with the situation. The report of the Legislative Committee, should fully convince you of the importance of this work.

GOOD FELLOWSHIP MOVEMENTS.

The two banquets held during the past year, the one to Senator Boies Penrose at the Bellevue-Stratford Hotel, Philadelphia, October 16th and the other one in connection with the Knit Goods Buyers' Association, the Knit Goods Manufacturers Association, and our own Association at the Waldorf-Astoria, New York City, on January 17th, were events of special interests and significance. The Penrose banquet was given primarily as a public expression of the knitting manufacturers of their appreciation of the Senator's loyal support and work in behalf of an industry in which both employers and employees are vitally interested. The many addresses delivered at the banquet were of such a character as to fully convey to the Senator and all other who labored so faithfully for our case, our thanks for deliverance from an impending evil that would have brought demoralization and ruin to many manufacturers and thrown thousands of willing workers out of employment.

THE KNIT GOODS BULLETIN.

Our report would not be complete without reference to the Association's Official Organ,—The Knit Goods Bulletin. We think you will all agree that the action of the Association in inaugurating the Knit Goods Bulletin, published monthly and mailed complimentary to all the knit goods manufacturers in the United States, has resulted to the very great advantage of the Association and enabled us not only to increase our membership, but also to add enthusiasm to our members upon the subject of Association work. The object of the Bulletin is to present to our members and others, in as condensed and convenient a form as possible many matters in which all are mutually interested.

REPORT OF THE LEGISLATIVE COMMITTEE.

BY C. H. BROWN, CHAIRMAN.

In beginning my report I wish to pay a deserved tribute to the late William F. Waring, chairman of the tariff committee, at the beginning of the tariff revision period last year.

I was intimately associated with Mr. Waring and am positive that had it not been for the hard work and reliable facts obtained by him, beginning with the time that a revision of the tariff became a possibility, we would not have secured the increase in rates of duty given in the Payne law, but would now be operating under the rates of the former Dingley law.

I also wish to call to your attention the loyal work done by the active members of the committee, George D. Horst, D. F. Harrington, F. L. Chipman, W. Park Moore, Garnett Andrews and J. S. Rambo, who neglected their business in spending much time in Washington, and at all times were in daily touch with the work being done there.

The matter of importance for us to consider is what the new law has accomplished for the hosiery interests. By referring to import statistics, recently mailed you, it will be seen that in 1907, which was the banner year for hosiery importations, the landing value of hosiery, costing abroad less than $1 per dozen, was $1.60. At the end of

the first quarter under the Payne law, December 31, the landing value of this grade of hosiery was $1.76 per dozen pair, and at the end of the second quarter, March 31, the value of this grade was $1.74, which shows that instead of an advance of 20 cents per dozen, given by the Payne law, we have actually secured but 16 cents increase, as a maximum. During the quarter ending December 31, there were imported 851,266.32 dozen pair of hose, and in the quarter ending March 31 there were imported 1,370,122 dozen pairs of hose. For the month of April there were imported 268,768 dozen pairs, which indicates that hosiery importations are fully up to the number imported under the Dingley law. I have referred only to the importations of hosiery valued at $1 or less per dozen pair, but the other grades show about the same ratio.

I wish to call attention to the grade imported at 30 per cent., which has increased from 8,227 dozen in the quarter ending December 31, 1909, to 37,861 dozen pairs in the quarter ending March 31, and while this increase has no particular effect on the domestic market at present, it certainly will have if this increase continues.

To sum up the benefits accruing to the hosiery trade as a result of an increased duty, given by the Payne law, the result has been the ability to run our mills on nearly full time, but there has been no increase in cost to the consumer and but very little increase in wholesale prices.

The German manufacturers of hosiery have without doubt been heavily stocked and have been selling at most any price to obtain cash, but I doubt very much if they will take new business at such low prices and this opinion is based on information received direct from Chemnitz.

Exhibition of the Association.

Horticultural Hall in which the exhibition was held, is located just across the street from Hotel Walton, and was very convenient for the members and visitors after attending the session of the convention. Viewed as a whole, the scene in the exhibition hall was most artistic, combining the beautiful architectural effect of the hall with the pleasing designs and arrangements of the exhibits.

Practically all of the important knitting machinery dealers were represented by exhibits; and also a large number of dealers in allied machinery, accessories, and dye stuffs occupied spaces. Manufacturers always manifest decided interest in the exhibits and are alert to note improvements and inventions in the industry that will aid them in operating their plants on the most economical basis. Many purchases of machinery were noted during the exhibition. The accurate knowledge gained by manufacturers and a comprehensive idea of the claims for different machines will undoubtedly lead to future business for the machinery builders.

The following descriptions of some of the exhibits will give an idea of the scope and value of the exhibition:

SCOTT & WILLIAMS, Philadelphia, Pa., had on exhibition an underwear machine, 15 inches in diameter fitted with "Richelieu" cams using a 50s single bleached yarn. The needle cylinder was cut 14 needles to the inch and produced a fabric claimed to be equal to, if not superior to, the Swiss imported article. Another machine on exhibition was a full automatic shirt machine making a shaped single ladies' garment. A feature of this machine is that it is equipped with a chain mechanism enabling the operator to change to making ladies' ¾ union suits in a few minutes. This machine is cut 12 needles to the inch, using a 1/26s yarn.

This firm also exhibited an automatic half hose machine which automatically transfers the rib top to the plain portion of the stocking. This is the machine so extensively advertised by this company as a labor saver. The gauge stocking made on this machine was a 220-needle half hose contained in 3¾ inches diameter, using a 2/50s mercerized yarn and reinforcing the heel and toe with a 1/60s. The principal machines of this company were described in the April issue of COTTON.

WILDMAN MFG. CO., Norristown, Pa., had a comprehensive exhibit in charge of C. H. Bellis. They showed three body machines on both men's and women's underwear, and two hosiery machines for half hose tops. They also showed their general line of all classes of circular ribbed knitting machines, also the Ballard electric cutter which was exhibited separately by the selling agent.

WILCOMB MACHINE CO., Norristown, Pa. One of the features of the exhibition was the impressive and artistic display of this company. They occupied the entire stage at the rear of the hall which was fully four feet above the floor level. This lent a prominence which could easily have been a disadvantage had not the decorators observed harmony in every detail in furnishing the fifty feet of space. The steps leading to the platform and the floor were covered with carpet. The background was of green, giving a pleasing relief to the four artistic tapestries located thereon. The two machines were kept in operation constantly to demonstrate their advantages. A machine was placed at each end of the stage, which allowed two demonstrations simultaneously and prevented congestion.

The electric sign extending over the entire exhibit announced the name in a blaze of red. Beneath the sign were clusters of lights of the same color, shedding a subdued glow over the bay trees immediately beneath and the entire space below. The machines exhibited were of the same type described in April issue of COTTON, to which the reader is referred for details.

GEO. D. MAYO MACHINE CO., Laconia, N. H., gave an interesting demonstration of its full automatic latch needle circular knitting machine for making ladies' hose, half hose, and footings for children's stockings, using both silk and cotton yarn. Five of these machines were in operation. Geo. D. Mayo was in charge of the exhibit. This machine was fully described in the April issue of COTTON.

ACME MACHINE CO., Franklin, N. H., had an interesting exhibit with W. F. Duffy in charge. The display consisted of one plain machine making half hose, and one 240-needle machine making ladies' gauze work with garter top and double sole. These machines showed all the many important improvements that this company has added to their already well established product. While the two machines showed but a small part of the varied classes of work that can be done on this type, they demonstrated their unquestionable merit.

GROSSER KNITTING MACHINE CO., 260 West Broadway, New York City, manufacturers of Grosser hand knitting and full automatic power machine showed machines for

WILDMAN MANUFACTURING COMPANY
GEO. D. MAYO MACHINE CO.
MAIN OFFICE LACONIA, N.H. PHILA. SHOW ROOMS, 6 & 7 KNICKERBOCKER BLDG, 6TH & ARCH STS.
THE BEST MILLS IN THE USE ONLY "HURRICANE" MACHINERY
UNIVERSAL WINDING
ROSSER KNITTING MACHINE CO.
The Roessler & Hasslacher Chemical Co. 100 WILLIAM ST. NEW YORK

SOME DISPLAYS AT THE EXHIBITION OF THE NATIONAL ASSOCIATION OF HOSIERY AND UNDERWEAR MANUFACTURERS, PHILADELPHIA, PA.

1.—WILDMAN MFG. CO., NORRISTOWN, PA. 2—GEO. D. MAYO MACHINE CO., LACONIA, N. H. 3—THE PHILADELPHIA DRYING MACHINERY CO., PHILADELPHIA, PA. 4—UNIVERSAL WINDING CO., BOSTON, MASS. 5—GROSSER KNITTING MACHINE CO., NEW YORK CITY. 6—THE ROESSLER & HASSLACHER CHEMICAL CO., NEW YORK CITY.

making sweaters, coats or jackets. The Grosser knitters are of the flat needle type which can be run either by power or hand.

The Koehler overseamers for selvage goods and the Koehler loopers for hosiery and underwear attracted considerable attention. The space occupied was prominent, and for a practical display was both unique and comprehensive.

Jenckes Knitting Machine Co., Pawtucket, R. I., exhibited four styles of machines namely, a 220-needle 3¾-inch machine equipped with yarn changing and garter top attachment; a 240-needle 3¾-inch machine equipped with a garter top and high spliced heel and double sole attachment; a 234-needle 3½-inch machine which is claimed to be the finest gauged full automatic seamless hosiery machine on the market. It is made only by this firm, and one 200-needle 3½-inch machine equipped with a special reinforcing attachment called 17C which will handle linen, lisle, or any other kind of yarn.

The Hemphill Mfg. Co., Pawtucket, R. I., exhibited four of their Banner automatic knitting machines in booth No. 77. One of the machines that attracted considerable attention was the double feed automatic machine, which knits twice as fast on the leg and foot as a regular machine. It is used for plain work. Another machine shown was for plain work, being a full automatic machine. Another was for making pleated work. A fourth machine was a full combination machine which will knit practically anything. E. H. Sturtevant, treasurer of the company, Franklin Falls, N. H., was in attendance.

H. Brinton & Co., Philadelphia, exhibited three machines, namely, their single feed automatic ribber, with a two-speed attachment and detachable welt device, and with all their latest attachments. The increase in production on this machine is claimed to be from 30 to 60 per cent., depending upon the styles, etc. The plain, single feed automatic ribber was exhibited, and also their universal necktie knitter for knitting men's scarfs. The company has issued a new catalogue describing all their machines and latest attachments, which they will be pleased to send upon request.

Southern Textile Machinery Co., Paducah, Ky., was represented by E. O. Davis, general manager, and R. A. Vine, manager Philadelphia office, and exhibited three machines, namely, one 22-point looper with trimmer, which is adopted for work on fine hosiery. It is claimed to be the only steady dial two-thread looper in the world. The makers claim 20 per cent. more production for this machine than any other on the market.

One 8-point sweater machine was shown for joining the selvage edge of sweaters, and also for looping on cuffs, with a trimmer. This machine also has the steady dial motion. A looper without a dial was exhibited which did not break a thread or skip in the chain during the entire week of the exhibition. The sewing mechanism is very simple and compact, and sews independently of the rest of the machine.

The Standard Machine Co., Philadelphia, Pa., was represented by Jacob Bauer, manager, Chas. Schoneman, Pennsylvania representative, and P. R. Rahm, Southern representative. They exhibited three different styles of machines, namely, one 240-needle machine for operation on silk, one 220-needle machine for operation on mercerized lisle, and one 176-needle machine for operation on combed peeler. These machines were all equipped with their new splicing device, which is designed to splice linen, lisle and soft yarns. It is claimed that these machines will produce from 20 to 25 per cent. more than any other machines on the market. This company does not confine itself to knitting machines alone, but is ready to give estimates on anything from needles to a complete plant.

Ainslie Knitting Machine Co., Brooklyn, N. Y., was represented by S. Broadwin, manager, assisted by S. Mishcon, and exhibited two important machines made by the well-known firm of Claes & Flentje, Mulhausen, Germany, namely, one hand machine for making accordion neckties, which is in great favor in this country for producing transparent patterns in high class silk goods and is also adopted to making fancy racked patterns and other articles, such as blouses, golf vests, automobile shawls, wristlets, etc.

The other machine was a fully automatic power machine, equipped with an automatic striping apparatus with take-up chain and electric stop motion. This machine is adopted for making striped tubular web by putting a second color inside the web. It has also the advantage that the end running from one stripe to another is left inside the web, which saves the necessity of drawing in of the threads.

Merrow Machine Co., Hartford, Conn., well known manufacturers of sewing machines had an exhibit in charge of E. H. Allen, manager of the Philadelphia office. They displayed and demonstrated a welting machine for shaping and topping ladies' fine hosiery; also their crochet, two-thread shell stitch machine, hemmer, and their three-thread machine. The crochet and three-thread machines were described in the April issue of Cotton.

Willcox & Gibbs, New York City, had an interesting demonstration showing their "Overlock" and "Lockstitch" machines in operation. Expert demonstrators operated these machines. The representatives of this firm at the exhibition were D. H. Bates, manager of the hosiery machine department, N. S. Kellog and C. C. Curtis, the latter being manager of the Philadelphia branch.

The Ballard Electric Cutter Co., Philadelphia, Pa., was represented by H. Maimin, D. S. Maimin and H. F. Fabian, and exhibited its new electric cutter, which is the only automatic electric cutter ever put on the market. This machine oils, cleans, and cools automatically; does not sprinkle oil on the goods, has no vibration or rattling noise; has a magnetic steel motor and steel bearings; and is equipped with mechanical devices for installing and sharpening the knives. It is claimed for this machine that it will do 35 per cent. more work than any other cutter made and save the user from $2,000 to $10,000 per year.

The Continental Latch Needle Co., 120 Liberty St., New York City, represented by E. W. S. Jasper, exhibited the imported German latch and spring beard needles manufactured by Th. Groz & Sohme, Ebingen, Germany. The exhibit contained about 500 different styles of needles. The chief feature of their latch needles is an excellent screw rivet which does not get loose or wear rough.

Universal Winding Co., Boston, Mass., had a very complete exhibit, the principal feature being a practical demonstration of the "Nutaper" coning machine. This machine was not only run for exhibition purposes but also to supply yarn for the knitting machines at the exhibition, Scott and Williams being among those who were supplied. They also showed a machine for winding yarn direct from the skein to the bobbin. This was of particular interest to weavers of worsted and silk. The varied display of cone

winding covered a wide range, from fine silk to coarse packing yarns.

THE OSWALD LEVER CO., Front and Lehigh Sts., Philadelphia, gave a simple but effective exhibition of their hosiery winder which is attracting favorable attention on account of its simplicity. This is probably the lightest machine of its class, yet it is claimed to be the most rigid. James Joyce was in charge of the demonstration.

SMITH, DRUM & CO., Philadelphia, Pa., exhibited a circulating dyeing machine for hosiery, a rotary dyeing machine for sulphur black and a hosiery press. R. P. Smith was in charge of the exhibition.

PHILADELPHIA DRYING MACHINE CO., Philadelphia, Pa., had an effective exhibit in charge of W. W. Sibson. Their

EXHIBIT OF WILCOMB MACHINE CO., NORRISTOWN, PA.

"Hurricane" stocking drying machine was in full operation. The features of this machine are its fireproof construction throughout, and having all bearings on the outside. It is built entirely of structural steel, there being two outside panels with air cell asbestos between. The drawers run

THE J. B. FORD CO., Wyandotte, Mich., manufacturers on roller bearings and are also of steel.
of Wyandotte Textile Soda, had an interesting exhibit of their product, and distributed souvenirs. The exhibit was in charge of H. N. Reynolds and F. S. Klebart.

CHARLES BECK CO., 609 Chestnut St., Philadelphia, Pa., exhibited their pointed staple label wire stitcher, and some of their cutting machines. The machine for tagging and labeling hosiery and underwear excited favorable comment as the wire used is much finer than that now in general use.

REX DYEING CO., Philadelphia, Pa., represented by F. C. Scholler and Adolph Scholler, exhibited a sample line of blacks and colors on hosiery. This firm makes a specialty of aniline black (oxidized) that does not injure the fiber. They are meeting with great success. Write for a "Pickaninny" and be convinced.

NICETOWN DYE WORKS, Philadelphia, Pa., had an exhibit of finished fabrics from their local plant which has a capacity of 10,000 pounds a day. About 125 hands are employed. Benjamin F. Anderson was in charge of the exhibit.

HARDING AND FANCOURT, Philadelphia, Pa., exhibited their complete line of soaps, oils, etc., among which were Tuscan softener, green olive soap and a new preparation imported from Germany, called Ricinal soap.

J. L. SHOEMAKER & CO., 15 South 6th St., Philadelphia, Pa., manufacturers of the "New Jersey Wire Stitcher," had an exhibit in charge of John Toyiesur. The machine is used for stitching wire and attaching labels and tickets to hosiery.

WHOLEFOOT HOSIERY STAMP CO., Philadelphia, Pa., was represented by Theo. Parker Spitz, 346 Broadway, New York, and Wm. E. Underwood, Philadelphia, and exhibited its new "Wholefoot" hosiery stamp, which will stamp the entire foot (toe, sole, heel) of the stocking with one impression, and do it in a uniform and perfect manner. It will increase the speed of marking hosiery from two to three times the number of dozens per day compared with the single stamp method, and will save from a quarter to a half cent per dozen pairs marked. In other words, three stampers will do the work of five and do it better according to the marker. The stamps are made in two sizes, namely, No. 1 for children's hose from 5 to 10 inches, and No. 2 for ladies' and men's from 8 to 12 inches.

The company also exhibited a cabinet for the reception of the stamps to keep them clean and always ready for use. This company also manufactures a stamping ink specially prepared for the hosiery trade. It is pure white and dries almost immediately on the stocking and is said to go further than any other ink on the market.

CHAS. BOND & CO., Philadelphia, Pa., was represented by H. R. MacFern and H. L. Martin, and exhibited a full line of their power transmitting machinery, such as Bond's hangers, shafting, collars, pillow blocks, etc., in addition to the Mossberg Wrench Co.'s counter shafts and belt shifters, Veelos' Balata belting, Chisholm & Moore's chain hoists, Grundy's flexible insulated couplings, American steel pulleys and the Gilbert wood split pulleys. They report business good, many sales having been made during the exhibition.

THE KAUMAGRAPH CO., New York City, was represented by Trowbridge Marston of the New York office, and exhibited their process of trade marking hosiery and underwear. This process is applicable to stamping any fabric from sheerest silks to the heaviest horse blankets. It is accomplished by means of a tissue sheet bearing a design or trade mark which is to be used on the fabric. The tissue sheet is placed face downwards on the goods and stamped with a hot iron. The impression is immediately transferred, leaving a design which is perfectly dry. There is no danger of blur or offset. These designs can be made in gold and silver or any of the colors, all at the same price. The price varies according to the size of the stamp and the number ordered.

HENRY L. SCOTT & CO., Providence, R. I., represented by David C. Scott, exhibited an automatic power yarn tester, two hand power yarn testers, one cloth tester, one yarn scale, one sample scale, two roving reels, one yarn reel two yarn inspectors, two twist counters, and an automatic power attachment for the yarn and cloth testers.

The automatic power yarn tester was shown for the first time and attracted great attention. It produces an absolutely uniform test of yarns and incorporates a quick return of the lower hook of the tester to the starting posi-

tion. This machine has a new attachment for quickly resetting the weight.

The small yarn inspector was also shown for the first time. It winds a small card for sample mailing purposes, and does it uniformly, placing 20 lines to the inch. Mr. Scott reported many sales during the week.

WESTERN ELECTRIC CO., New York City, whose motto is, "Something electrical for every electrical need," showed a varied assortment of motors for manufacturing purposes, adaptable to almost any need. They also had on exhibition their "Sunbeam Mazda" lamp, their high efficiency reflectors made of glass and steel, ventilating fans, telephone equipment for mills, etc., covering a wide range in electrical apparatus.

W. T. LANE & BRO., Poughkeepsie, N. Y., well known manufacturers of patent steel frame canvas mill brackets, doffing boxes and trucks, booked a great many orders from the visiting hosiery and underwear manufacturers. The lightness, simplicity, strength and durability of their product were explained to be the principal features. E. H. and D. F. Lane were in charge.

UNITED STATES TRUCK CO., Philadelphia, Pa., was represented by C. B. Morris. They exhibited their well known "Hercules" self loading truck, the great advantage of which is that there is no necessity to lift the box or case to get the nose of the truck under it, as is necessary with the old style. Simply push the truck up against the case; drop the hook arm extending from the top cross piece of the truck, over the far side of the case, pulling it tight; then pull down on the truck handles, and the load will come over on the truck. There is no slamming, banging, slipping or dropping of the load. The company also exhibited a special factory truck designed for textile mills. It is built for strength and durability, and will, it is claimed, last longer than any truck on the market.

HARDING, TILTON & CO., Boston, New York and Philadelphia, had a very prominent location on the main landing, their exhibit being illuminated by an electric reproduction of their trade mark, "Super-lustre yarns." The display consisted of yarns—spun, mercerized and bleached—by the Holmes Mfg. Co., New Bedford, Mass., of which C. L. Harding is president and Chas. M. Holmes, treasurer, and agent. These yarns represented the first product of the Holmes mill and attracted much favorable attention. The exhibit was in charge of Wm. C. Reynolds of the Boston office, assisted by John M. Reynolds of the Philadelphia office.

JENCKES SPINNING CO., Pawtucket, R. I., represented by Geo. W. Martin, exhibited a line of combed peelers and Sea Island yarns, both lisle and mercerized, from 10s to 120s. They also make a specialty of single mercerized yarns for splicing purposes from 10s single to 100s single. All of their mercerized yarns are super-processed. They put these yarns up on cops, quills, cones, tubes and warps.

R. A. BLYTHE, INC., 308 Chestnut St., Philadelphia, Pa., selling agents for the Lehigh Valley Silk Mills, exhibited various samples of Tram silk used for knitting and weaving of all descriptions. This company also handles all kinds of cotton yarn for the trade. A feature of the exhibit was a Mayo knitting machine in full operation using the silk yarn, etc.

LOWELL MACHINE SHOP, Lowell, Mass., had an exhibit of its eamless new taper cones. G. W. Foster representing the company is the inventor of the "eamless" winder.

ROESSLER & HASSLACHER CHEMICAL CO., 100 William St., New York City, were represented at the exhibit by Dr. Ulrich Schoedler. They had a most interesting and attractive display of bleached goods, woolen, worsted, cotton, mercerized cotton, silk, tussah silk, linen, and mixtures. An uncommon feature of the Peroxide of Sodium bleach was demonstrated by its ability to bleach these mixtures in the same barrel.

This display also showed the remarkable results obtained by the new "double bleach" on worsted hosiery. Another feature was an exhibition of samples showing work done by the Dufold Health Underwear Co., which makes high grade union suits. This display demonstrated unquestionably the merit of the Peroxide of Sodium bleach on cotton and wool in the same bath.

BERLIN ANILINE WORKS, 213 S. Water St., New York City, gave a comprehensive display of various colored silk and cotton hosiery of the one-dip process; also numerous shades of mercerized cotton yarns, the new colors being Brilliant Congo Violet R and B and Brilliant Congo Blue R and B. C. Feldman, the Philadelphia manager, was in charge.

NOTTINGHAM HOSIERY INDUSTRY.

The exports of hosiery from Nottingham, England to Canada in 1909 reached what was considered high-water mark, but contracts for hosiery just received there, to be delivered next autumn, double the quantities, in most cases, of last year's shipments. The term now includes all knit goods, underwear, blouses, sweaters, wraps, caps, gloves, mittens etc., as well as socks and stockings. The orders just received cover a wide range of heavy woolen goods, both plain and fancy. The principle cause for the large orders was the threatened disagreement between the Dominion and the United States over tariff rates, which was expected to close the Canadian market to American hosiery or to increase their price, to which may be added the recent great progress made in the Nottingham industry. Besides the enlarged trade with Canada, the trade with Australia and South Africa has also expanded. Trade with the United States, however, shows no improvement, and the Nottingham hosiers seem hopeless of the future in that direction. The declared exports of hosiery and underwear to the United States in 1909 amounted to $167,904.

Cotton Preparation for Absorbing Nicotine.

In reply to a New York inquiry concerning a Russian cotton preparation used in mouthpieces of cigarettes in order to absorb the nicotine, Consul-General John H. Snodgrass, of Moscow, writes:

"It is found that cotton wadding impregnated with some yellow material supposed to absorb nicotine is sold by tobacconists under the name of 'wata hawana.' It is said, however, that this preparation also absorbs the flavor of the cigarette, and although on the market many years it is not much in use. Machine-made cigarettes frequently contain a bit of cotton wadding in the mouthpiece to hinder the falling out of tobacco, and this also absorbs the tobacco juice to a degree. This is ordinary 'sliver,' made on slubbing frames from good, clean cotton at any cotton mill."

The Textile Mill Situation in the South and New England.

NEW ENGLAND MILL SITUATION.

(*Special Correspondence.*)

As frequently stated in these columns, during the past eight months, cotton mills on medium and coarse counts in New England are experiencing a "prince and pauper" year. The mills that correctly read crop indications and bought sufficient spot and future cotton to carry them over this crop year, are making a veritable mint of money, while the mills that are buying as required are losing money; and their losses will be in proportion to the number of months since last October that they have been buying spot raw material.

As an illustration of the development of this situation one might cite the sale of Androscoggin Mills stock during the middle of May at $241 per share as compared with a previous sale several weeks before of $205. This mill was fortunate in its purchases of cotton. It has had a good market for its fabrics and will show large earnings with probably an extra dividend in August. On the other hand the American Linen Co., of Fall River, one of the finest plants in that city, was not so fortunate in buying cotton, and early in May its stock fell to $100 from $130 per share, because there was a feeling that a deficit will be shown in the annual statement.

One of the largest mills in Massachusetts, west of the mill centers, could have shown a profit of 32 per cent. on its capital stock by reselling its cotton last month, that was purchased the last of August, 1909. This mill uses a long staple and was fortunate in getting a large quantity of its grade from the Mississippi Delta district. A smaller mill in Connecticut is just emerging from a very critical financial condition occasioned by unprofitable manufacturing. This mill had enough cotton to carry it until the first of the year; but since that time every bale of cotton manufactured into fabric has shown a loss, and had it not been for financial assistance from friends the mill would now be closed "by order of the sheriff."

The worst is surely over. Converters are gradually making up their minds that higher prices for fabrics must be paid, and the market shows the influence of this sentiment. Jobbers are more hopeful because they know positively that the manufacturer will not accept orders at a great sacrifice, and therefore the indications are for a firm undertone. Now and then one will meet a confirmed pessimist who believes that there is no proverbial silver lining; but when one meets several hundred of the leading manufacturers at a meeting assembled and you find courage and confidence in the very atmosphere, as was the condition at the Boston meeting, one can not remain a pessimist.

Heavy buyers have not entered the market as yet, because there still remains a feeling that although curtailment is general there is a large surplus of finished goods on hand which must be moved this season. The curtailment in general throughout the country is believed to be about 33 per cent., although buyers in Boston and New York claim it is not over 20 per cent. Sellers are holding firm at prevailing quotations. Fall River sellers have done a very fair business during the past month at firm prices, and there appears to be greater confidence in that city than for several months. There is a general idea that prints will be advanced by the middle of June, if not before; however, the information is not direct and if the market continues as dull for the next few weeks an advance will doubtless be postponed.

Fine goods are in better request in the primary markets. Western jobbers have placed some heavy orders for early fall delivery at prices that show a moderate profit. Ginghams are quiet with more demand for Southern staple than Northern. Fine ginghams are very inactive. Light fine goods are moving freely in the hands of jobbers, it is reported.

Ducks and denims are improving. Boston sellers are confident that there is to be an immediate revival in this market and consequently are holding prices firm. Drills are showing some improvement in demand at best prices than for several months. The drills lighter than 2.50 per yard appear to be more easily sold. Drills for overall manufacturers are firm in the New York market. Export drills are also firm.

The export market is exceedingly quiet. The China market is declared by export commission men to be demoralized. They state that there is a serious stringency of money in China and merchants are not willing to stock goods until the money market becomes easier. Furthermore, Japan is becoming a serious factor in the Chinese market for sheeting, and monthly reports of imports at Chinese ports show a constantly increasing quantity of sheeting from Japan as compared with last year. Chinamen are doubtful of any improvement until the American market becomes settled or the financial situation in their country becomes easier. The Red Sea trade is slightly better than the lowest point; but orders are few and far between. South American countries are taking ticking and drills in better quantities; but are not buying any other grades of American fabrics at the moment. Manilla demand is very quiet.

Sentiment in the hosiery markets is improving. Buyers from the primary markets are becoming active and some very good orders have been placed for Western account. Prices are unsatisfactory, but there is a greater degree of firmness of quotations than during April. The tendency of buyers to hold off in placing orders will probably postpone the opening of the new season until the last week in June when the government report on the statistical position of the new crop will be issued.

Cotton yarns have been advanced several times recently in sympathy with increased cost of spot cotton; but very few orders have been placed except at a material concession from posted values. One spinner sold 28,000 pounds of 30 two-ply yarn in skeins at 24¼ cents and two days later a smaller quantity at 24 cents. The first buyer needed the yarn while the second buyer was covering a contract for future delivery. The general curtailment of yarn mills is favorable. Surplus stocks are not increasing in New England, so that when the market turns, there should be a smart uplift in prices. Hosiery yarns are firmer in quotation with few transactions.

Builders of textile machinery are preparing for a dull

summer. Crompton & Knowles Loom Works predict a dull period for the balance of the year in the woolen and worsted departments of the textile industry, but believe an improvement in the cotton end will be noted this fall. Draper Co. is not receiving as many new orders as during the previous month, and reports general unfavorable conditions for textile machinery. Mill supply houses have had six weeks of record breaking dullness and inactivity. Belt manufacturers are making an effort to secure belting orders and contracts from outside of the textile field in order to offset the serious dullness that has developed in this industry.

Mill shares are not in as good demand as last month and frequently some of the gilt edge issues in the Boston auction rooms do not receive a bid from week to week. Bates Mfg. Co. has weakened slightly but as a whole the better class of cotton mill shares are holding firm. New Bedford shares are weaker with very few offerings. Fall River brokers report an extremely unsatisfactory market with prices inclined to sag.

MARKET REVIEWS.

MONTHLY REVIEW OF THE COTTON MARKET.

BY H. & B. BEER, NEW ORLEANS.

In commenting upon the set-back experienced by the new crop as a result of the late April freeze in the cotton belt, we stated that there remained ample time to make a good crop if favorable weather was had during the month of May, but as the rainfall was unusually heavy in May, it was possible and more than probable that bad weather would interfere with planting operations and cultivating the cotton that lived through the cold weather. At that time the situation was one of much uncertainty, and it was thought that the contemplated increase in acreage would be lost owing to reports of the scarcity of seed.

The three weeks following the cold wave furnished dry instead of the much feared wet weather, and, as a result, good progress was made in replanting and planting late cotton, so much so that seeding is virtually finished, all the seed required having been provided by the oil mills in the South. During the middle of the month splendid rains set in all over the belt, and having been delayed until planting was finished, could not have come at a more opportune time. The distribution of moisture has been general and the precipitation has been heavy as a rule, especially in Texas where plenty of moisture is required to make a good crop. Already crop accounts are becoming more favorable; we anticipate much good to come of the rains and have reason to entertain a more favorable view of the new crop situation. With occasional rains during the summer, the Southwest will probably make a large crop, and there is still a good chance to make a good crop in the Mississippi Valley and South Atlantic States, in which sections the only thing that can now be said of the crop is that it is about two or three weeks late in making a start owing to having had to replant and because of the recent cold weather.

We are not taking any interest in efforts being made to manipulate the market at New York, realizing that such operations do more harm than good by upsetting trade and because of their having an unfavorable effect upon business in general. About 350,000 bales of cotton were received on contracts in the Northern market, May delivery. This was a large undertaking, but we do not think that it was profitable, as it was most likely a hard matter to dispose of so much cotton, the better part of which is said to be high grades, at a price higher than 15 cents, basis of middling.

At the present level of values, and owing to the improved outlook for the new crop, there appears to be enough cotton to go around until new crop cotton finds its way to market, especially since the general order of the day, except in England, is to curtail consumption as much as possible; and Europe and Asia are using as much as possible of East Indian cotton at the expense of expensive American. On all sides one hears of a pending famine in the staple this summer, when, as a matter of fact, the world's visible supply at the opening of this week was nearly as large as it was in 1908 when prices were ever so much lower, and there was no famine that year. A more striking fallacy of the idea that there is to be a famine is located in the fact that there is nearly as much cotton in the visible supply in the United States as there was last year at this time, and in proof of the above citation we hereby submit the following comparatives:

	1910	1908
World's visible supply, all kinds, May 13.	3,351,000	3,522,000
Of which in the United States	808,000	937,000
Value of middling, New Orleans	15⅛	10⅝

As regards reports concerning lateness of the new crop, we feel satisfied that new crop cotton from southwest Texas will be early and that the yield in that section of the State will be the largest on record.

THE YARN MARKET.

What will probably prove to be the turning point in the yarn market was witnessed in the last two weeks of May, when prices were advanced sharply on practically all numbers, and a better inquiry than for some time was apparent. The persistent refusal of spinners to make concesisons in price, and the increased percentage of curtailment of the yarn mills seem to have at last had the desired effect in halting the downward tendency of prices and even giving a decided upward swing to the market. The technical position of the market seems to favor the spinner, and many well informed men are of the opinion that stocks in spinners' hands and consigned yarns are much smaller than general estimates. The hand-to-mouth policy pursued by buyers for so many months naturally leaves them in a vulnerable position, and the desire of many to secure their yarns at rock bottom prices, which some predicted would be lower than the low levels of the last month or two, will cause some to pay dear for not placing their orders when indications showed that spinners would have to shut down entirely or produce yarn at lower figures than have prevailed for some time.

The yarn market at the opening of the month was nothing more than a continuation of the dull and irregular

condition of the previous month, with irregularity in the price of the fine accounts being accentuated if anything. Buyers, as a rule would not be convinced that prices were scraping bottom, when they knew that quotations were below the cost of manufacture based on the current price of raw material. In justice to the buyer, however, it should be mentioned that their demands for yarns were very meager, and naturally they were cautious in making contracts ahead of their immediate needs.

Yarn mills continued to curtail operations, and the percentage of curtailment was increased through more drastic reduction in running time of the mills already on that schedule, and by other mills putting such a schedule into operation. Although weaving and hosiery yarns were in very little demand, yet the latter were steadier in price.

The middle of the month witnessed a slight price increase in nominal quotations and there were distinct signs of firmness appearing in the market. The fact was that the majority of mills had very little raw material on hand, and any contracts for yarn had to be made on the basis of current quotations of raw material.

The tendency toward higher prices became more decided toward the end of the month and had the effect of stimulating the market with an increased number of inquiries and sales at the advanced quotations. The feeling was quite general that the end of the depression in the yarn market had been reached, and that the tendency of prices would continue upward from now on. The change in prices over last month was from one-half cent to one cent and a half on Southern yarns. In view of the fact that the advance came in the face of very little improvement in demand, it would seem to indicate that when buyers do come into the market to meet a revival in the hosiery and weaving departments, the yarn market will show decided strength and advances over current quotations.

New York quotations at the end of the month were as follows:

SOUTHERN SINGLE SKEINS

4s to 8s	20	@20¼	22s	22½	@23
10s to 12s	20½	@21	26s	23	@23½
14s to 16s	20	@21	30s	24	@
20s	22	@22½			

SOUTHERN TWO-PLY SKEINS

4s to 8s	20	@20½	36s	28½	@29
10s to 12s	20½	@21	40s	29	@30
14s	21	@...	50s	34	@35
16s	21½	@...	60s	40	@41
20s	22	@22½	3-ply 8s upholstery	22	@...
24s	23	@...	4-ply 8s upholstery	22	@...
26s	23½	@...			
30s	24½	@25			

SOUTHERN SINGLE CHAIN WARPS

8s to 10s	20½	@...	22s	22½	@23
12s	21	@21½	24s	23	@...
14s	21	@22	26s	23½	@...
16s	21½	@22	30s	25	@...
20s	22	@22¼	40s	30	@31

SOUTHERN TWO-PLY CHAIN WARPS, ETC.

8s to 10s	20½	@21	26s	24	@..
12s to 14s	21½	@22	30s	25	@...
16s	22	@...	40s	30	@31
20s	23	@...	50s	35	@...
24s	23½	@24			

SOUTHERN PEELER FRAME CONES

10s	20¼	@...	20s	22	@...
11s	20¾	@...	22s	22½	@...
12s	21	@...	24s	23	@23¼
14s	21¼	@...	26s	23½	@24
16s	21½	@...	28s	24	@...
18s	21½	@...	30s	24½	@25

The secret of the extraordinary durability of the ancient Egyptain mummy cloth is now believed to be due to the fact that the materials were given a finish containing a vegetable glue derived from the "locust-bean" tree, largely met with in northern Africa.

THE KNIT GOODS MARKET.

As remarked in the review last month that the quiet condition existing in the knit goods market would probably continue for a month or six weeks, the narrow market of May justified the prediction. The month of May was indeed one of dullness with practically no change from the previous month. The lack of business was hard to account for, except that the general unsettled condition of the textile industry in all departments had influenced the knit goods section, and the buyers were as apprehensive of the general situation as those in the other departments. Every one seemed to have the feeling that something unexpected had to happen to clarify the commercial atmosphere and bring about a general revival of trade.

The business in the West has been a keen disappointment, the reason set forth being that the retailers were not doing the business they had anticipated. As a consequence the jobbers were not moving their stocks as readily as desired, and therefore their lines were not so seriously depleted as to rquire urgent replacement.

Buying for fall delivery has been very backward, it being estimated that less than half of the usual business has been placed to the last of May, which means that there is a considerable quantity of buying to be done in the near future. From this fact it would seem that one deterring factor was the lack of a few aggressive leaders in the buying fraternity to infuse confidence into the market. It is safe to say that when the real buying does begin with some of the larger buyers operating, there will be a scramble to place orders, and it is probable that proper delivery of goods will be hard to obtain for all who would be served.

The lack of demand has caused the mills to pursue a very conservative policy of curtailing production rather than of accumulating stocks, which will unquestionably aid in maintaining prices, as well as having a good moral effect on the market. Thus entrenched in a technically strong position, the seller can sit back and bide his time, knowing that the buyer will have to come into the market with orders to cover his requirements. None of the spring lines have been opened as yet, and sellers do not anticipate a general opening before July 1st. This delay was caused by the general hesitation of the market, and the desire to properly gauge the situation after the publication of the Government crop report which will be issued around the 1st of July. The tenor of this report will have an important bearing upon the situation, not only in this department, but in the entire cotton division of the textile industry.

Textile Mills in Brazil.

Activity in textile manufacturing in Brazil is indicated in the following notes from Rio de Janeiro: The largest jute mill in Brazil, which controls the output of the finished product for coffee sacks, operating in the city of Sao Paulo, has added 5,000 spindles, and now has 15,000 spindles in regular operation, making it one of the largest in the world. At present many of the small jute mills in Brazil, which import yarn largely from Scotland, buy none of the Brazilian spun jute, but the increased production from the mill mentioned will undoubtedly decrease the imports of jute yarn for small weave mills. The spindles now in use supply practically all the large mills in Brazil, as well as the 1,500 looms in the two mills owned by the same concern operating the spinning mill.

COTTON MANUFACTURING

HISTORY OF WEAVING.

(*Contributed exclusively to* COTTON.)

BY A. E. TUTTLE.

NORTHROP LOOM.

The most successful invention connected with the weaving of fabrics with one color of filling is undoubtedly the filling-changing mechanism devised by James H. Northrop. This mechanism dispenses with the necessity of having to stop the loom when the filling runs out, for the purpose of substituting a full shuttle for an empty one. Instead, a device is substituted, which automatically places a full bobbin in the shuttle and forces the empty one out, while the loom is running at regular speed.

The Draper Co., in 1889, brought to the attention of the public what was perhaps the first successful shuttle-changing mechanism, made by Mr. Northrop. This invention had superseded a shuttle changer developed at the same works by A. E. Rhoades.

The Northrop shuttle changer was soon discarded in favor of the filling or bobbin changer, the method now used in this well known type of loom.

The marketing of the Northrop loom began in 1895 and since then over 165,000 looms have been sold or are being built on order in this country alone, which is ample evidence of the practicability of the device. Fig. 13 illustrates the filling changing mechanism of one of the early Northrop looms, in which the transfer of a bobbin to the shuttle is shown. The empty bobbin is shown descending on a chute to the bobbin receptacle.

The principle upon which the mechanism works is clearly shown. The absence of filling is detected by the filling fork. Through connections with the latter, the forward movement of the lay rocks a transferrer, or pusher, forcing the lowest bobbin, which is held horizontally in the hopper, into the shuttle, where it is retained by springs which grip the rings on the base of the bobbin. Simultaneously the empty bobbin is displaced.

The thread from the end of the bobbin is automatically led into a self-threading eye of the shuttle, as the latter is picked across the lay. The latest type of hopper, in which 25 bobbins may be placed, is shown in Fig. 14.

An E model loom is illustrated in Fig 15. This loom is arranged for weaving 5-harness goods. The illustration

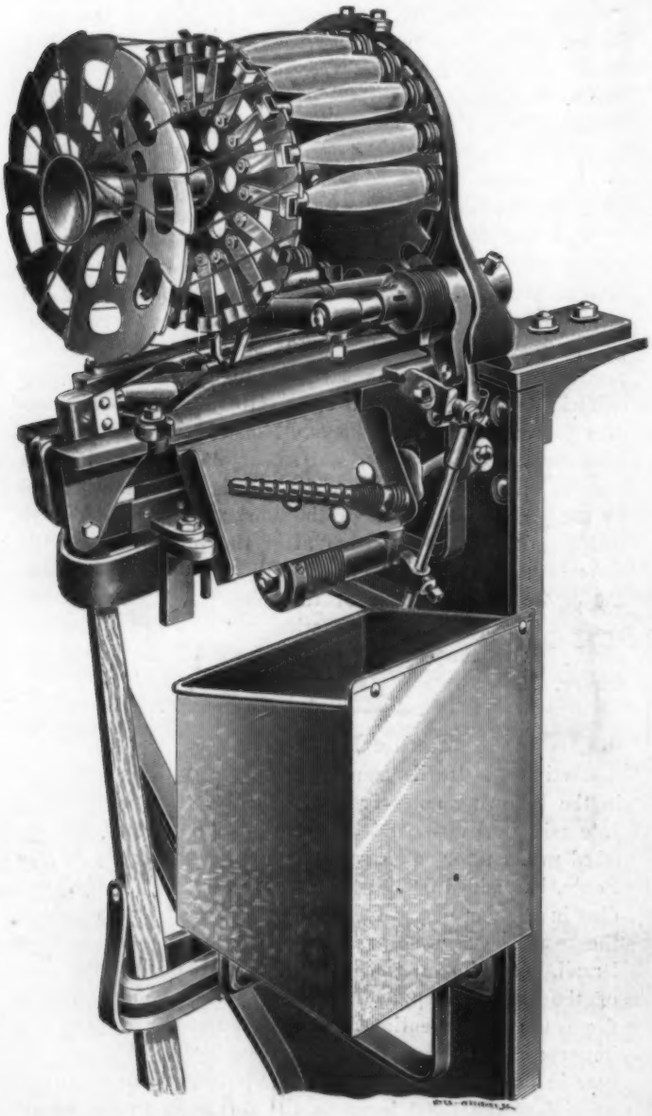


FIG. 13. NORTHROP FILLING CHANGING MECHANISM.

FIG. 15. DRAPER MODEL E LOOM.

shows the feeler, double fork, high cloth roll, worm take up, loom seat, etc., on the loom.

The development of the Northrop filling changer and its increasing scope, have necessitated the invention of numerous subsidiary motions or devices, among which may be mentioned, warp stop motions, filling cutter temples, self-threading shuttles, and feeler motions for changing the bobbin before the filling is entirely spent, in order to prevent mispicks. Not the least valuable change in detail has been the arranging of a filling fork on each side of the loom.

STAFFORD IDEAL LOOM.

Another automatic filling changing loom that has proved to be a success is the "Ideal" automatic loom made by The Stafford Co., Readville, Mass. This loom differs from the

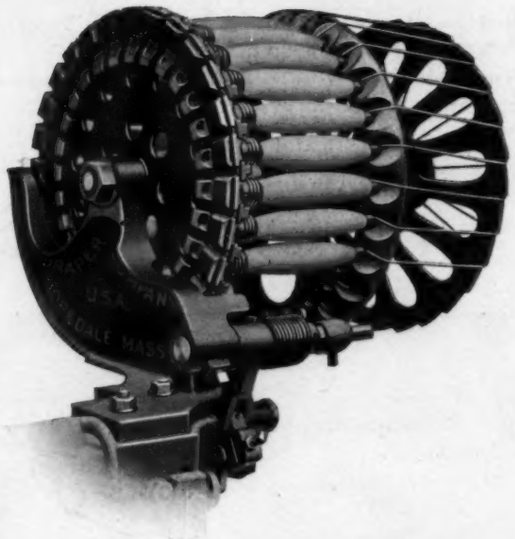


FIG. 14. NORTHROP 25-BOBBIN HOPPER.

Northrop loom in that, when the filling becomes exhausted, the shuttle is changed instead of the bobbin. A reserve supply of shuttles is placed in a magazine on the breast beam of the loom. As many as ten shuttles may be carried in a magazine at one time. When the filling runs out, or breaks, the loom stops, the old shuttle is ejected and a new one with a fresh supply of filling placed in the box, and the loom restarts, all of which is performed automatically.

The period for which the loom is stopped to effect the change of shuttle is about three or four seconds.

The loom is practically a plain loom with this shuttle-changing attachment added. While the loom is running, the shuttle-changing motion is absolutely at rest, and has no connection whatever with the weaving functions of the loom. It only comes into play when the filling has to be replenished. When the shuttle-changing mechanism of this loom is working, all of the principal motions of the loom are stopped.

Incidental devices on this loom are a double fork pick finder attachment, and a warp stop mechanism using what is claimed to be the lightest drop wire on the market.

The pick finder is used where three, four, or five harness goods are made, such as drills, denims, sateens, etc. This device takes the place of the ordinary feeler motion and makes goods of the kinds named without mispicks and without waste of filling.

The shuttle-changing device is also used on looms arranged with dobby heads. Fancy goods of wide range are made very successfully on this class of loom. Fig. 17 illustrates a Stafford loom of this type.

FANCY WEAVING.

For making fancy weave patterns dobby or Jacquard shedding mechanism are used. Additional devices, either on cam or fancy looms, are used for producing lenos, swivel, lappet, terry, and other fancy patterns.

Colored effects are made with warp yarns irrespective of the type of loom employed. When more than one color of filling is inserted, looms with two or more shuttle boxes at one or both ends of the lay are required.

Leno fabrics are characterized by certain warp yarns twisted partially around other warp yarns during weaving. To accomplish this, half and return motions, actuated by connections with the dobby, raise certain ends from the lower position in the shed to the center and back to the bottom in the time occupied by one pick. Two harness

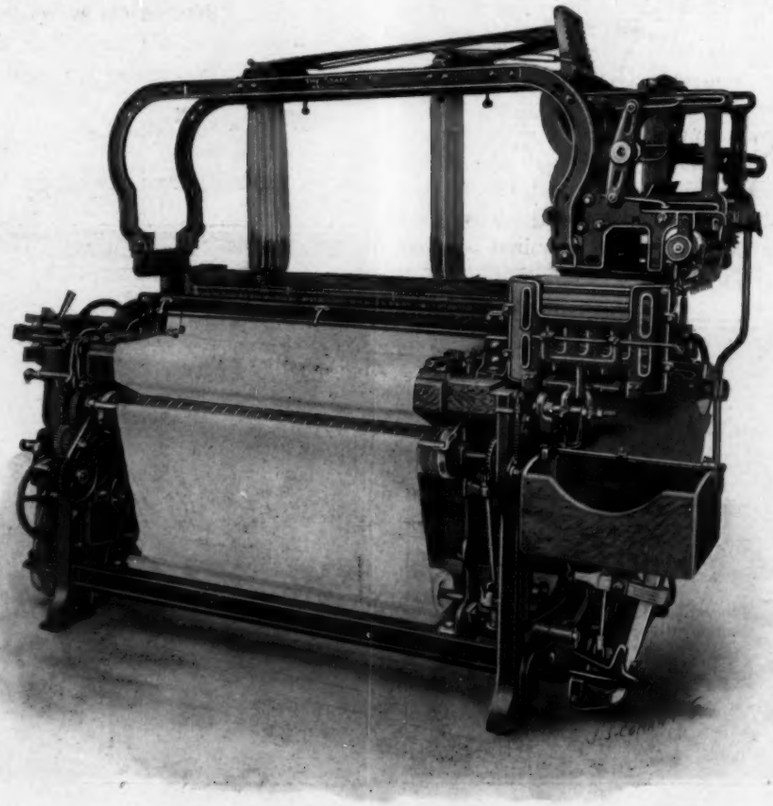


FIG. 17. STAFFORD FANCY GOODS LOOM.

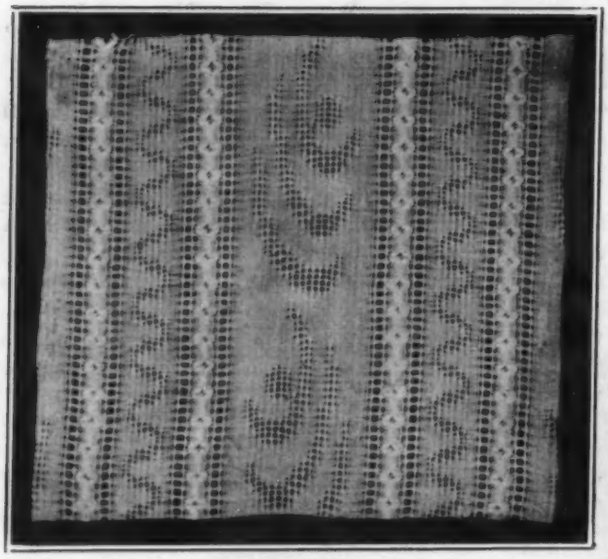


FIG. 18. JACQUARD LENO FABRIC.

jacks work in conjunction with each other so that the harness shaft dropped by one is met by the other at the center of the shed and carried back to the top position. In this manner the crossing ends are allowed to pass from one side to the other of the standard ends on two successive picks. The crossing ends are placed over or under a movable back rest which is actuated to slacken the yarn when the crossing picks are being inserted. Fig. 18 is an illustration of a Jacquard leno fabric.

Lappet effects, as illustrated in Fig 19, are made by yarns drawn through needles placed vertically in front of the reed. The reed, itself, is placed a slight distance back of the race-plate, necessitating a false reed or set of needles to guide the shuttle in its passage across the lay.

Lappet effects are usually continuous, as in Fig. 19.

Swivel effects differ from lappet effects in having the extra yarn placed at the back of the cloth when not desired to be employed for figuring purposes. The extra yarn is inserted by small shuttles actuated on the rack and pinion principle. These shuttles generally swing with the lay, but in an improved form they are brought into action with the lay only at such times as they may be required to form the pattern.

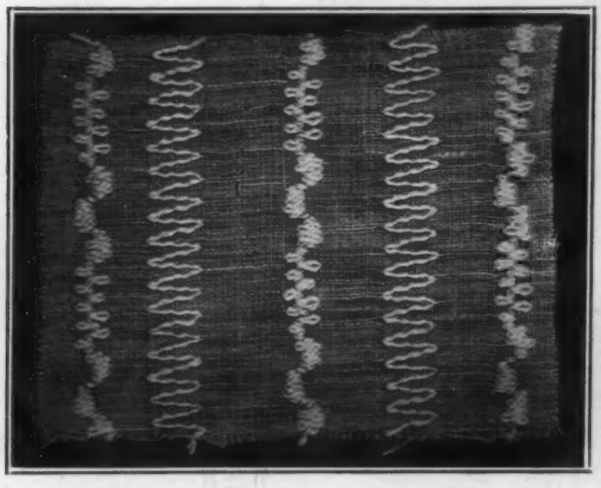


FIG. 19. SAMPLE LAPPET CLOTH.

Fig. 20 is an example of a fabric in which three colors of filling have been used to make the spots. These were inserted by three sets of swivel shuttles.

The production of cloth with patterns formed with swivel shuttles is necessarily small, as well as expensive, because the regular shuttle of the loom is out of action when the swivel picks are being inserted, and only one line of swivel shuttles can be actuated at the same time.

An embroidery loom is used for producing cloth shown in Fig. 23. This loom inserts the figuring yarns somewhat

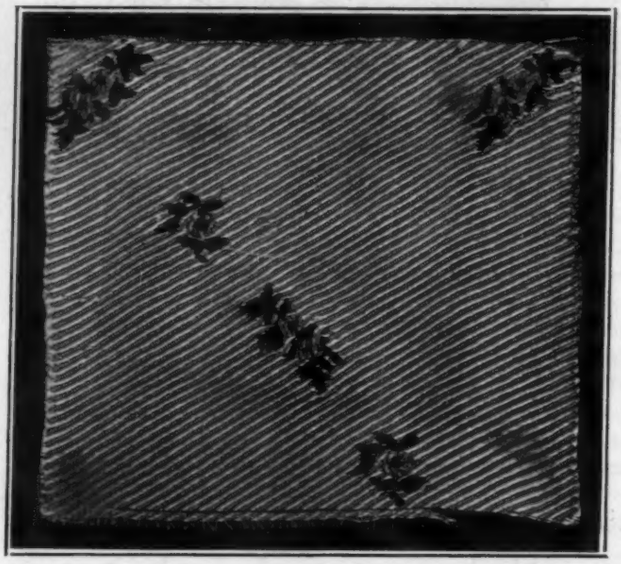


FIG. 20. SAMPLE OF SWIVEL CLOTH.

on the swivel principle, but more elaborate patterns can be made on it than on the swivel loom. On a swivel loom the figures are seldom made in a line at distances nearer than two inches, whereas the embroidery loom carries an embroidery shuttle every half inch.

Terry pile fabrics are dependent upon three important factors; the weave, warps, and loom mechanism. Two warps are used, one of which is heavily weighted in the

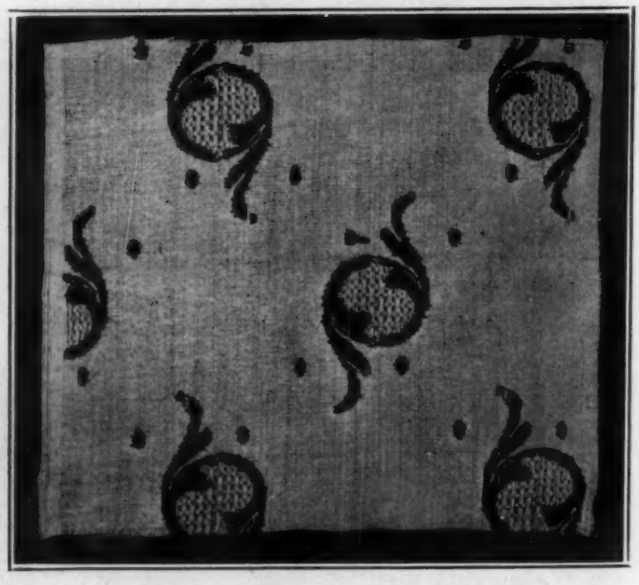


FIG. 23. SAMPLE FROM EMBROIDERY LOOM.

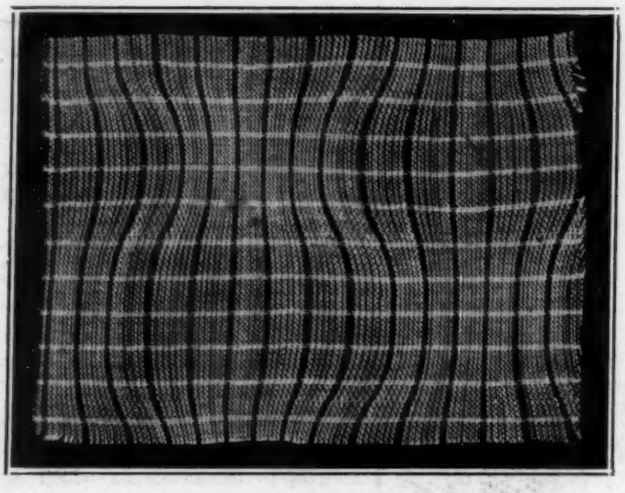


FIG. 24. ONDULE FABRIC.

loom to give the proper tension while the other is lightly weighted for making the loop surface on the fabric. The terry mechanism on one style of loom holds the reed a short distance from the fell of the cloth on two picks, (in a 3-pick terry) then moves it forward to the fell of the cloth on the third pick. On the second pick, the filling has fastened onto the ends of the loose warp to such an extent that the latter is drawn forward at the third pick and is made to stand out on the cloth in small loops.

Ondule fabrics, illustrated in Figs. 24 and 25 are usually made on looms having a reed capable of being moved vertically. Reed wires are arranged as shown in Fig. 26 to

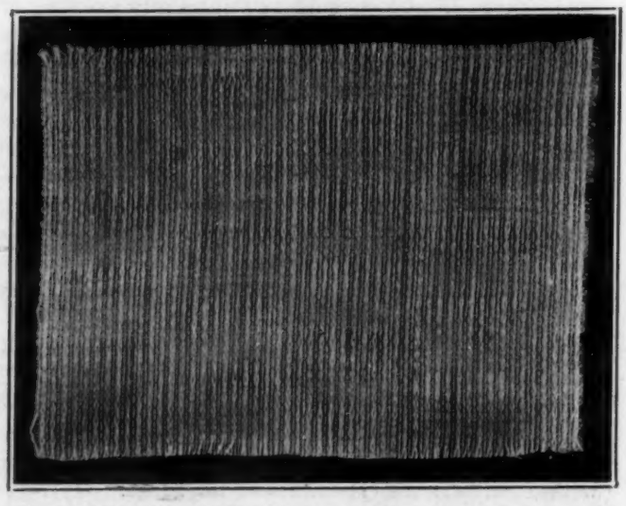


FIG. 25. ONDULE FABRIC.

produce sample Fig. 24, and as in Fig. 27 to produce sample Fig. 25. Fig. 26 shows the face of the reed, the top and bottom being similar to an ordinary reed. The dotted line in Fig. 27 shows the top of the reed, the solid line shows the bottom line of the wires in the reed.

A general comparison of a modern loom, fully equipped, with a loom made 20 or 30 years ago will indicate that the art of weaving has advanced primarily on account of the development of auxiliary motions and attachments. There has been little or no change in the form of shedding, picking or beating-up.

AN IMPROVED HUMIDIFIER.

(*Contributed exclusively to* COTTON.)

BY A. L. M.

In all departments of a cotton mill, it is necessary to keep the air constantly supplied with the requisite amount of moisture and diffuse such moisture throughout the rooms. In the practical use of humidifiers, the spray is delivered from the spray nozzle in a cone-like body with sufficient density and velocity to draw a current of air through the humidifier. The mixed air and spray passing through the humidifier, attains considerable velocity and issues radially from the lower end of the casing. The atmosphere of textile factories is frequently heavily charged with lint, "fly," and other impurities which enter the humidifier with the current of air, and are thus vigorously doused with the water comprising the spray.

This new humidifier arrests and collects these impurities and prevents them from being returned to the water tank, and also provides ready means for cleansing the same whenever it is found necessary.

Spray types of humidifiers are essentially of two kinds, those discharging the spray upwardly, and those discharging downwardly, which may be termed up-draft and down-draft respectively.

The up-draft is only applicable for a spray produced on an atomizer principle by both air and water; there is not sufficient water going through the heads where the spray is atomized to make either the "drip," or the removal of the lint and "fly" collected a material factor because comparatively little of it is washed from the atmosphere.

The down-draft type of humidifier is the one generally used where hydraulic spraying is resorted to for producing the spray. In this type of apparatus the amount of water is of such consequence that the "drip" must be taken care of, and that part of the lint and "fly" that collects on the inside of the apparatus must also be capable of being removed.

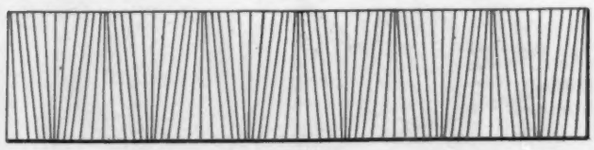


FIG. 26

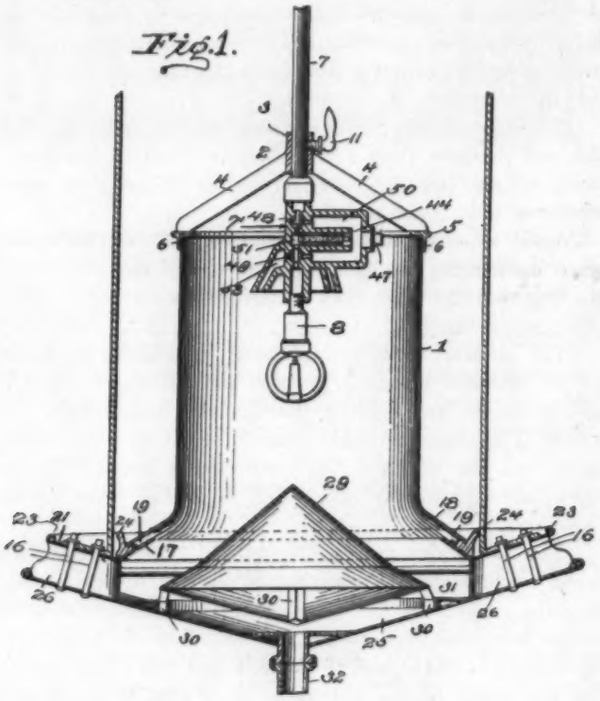
FIG. 27

REEDS FOR ONDULE FABRICS.

The humidifier is made very accessible and durable by making the lower flared portion of the casing separate and independent of the casing, and by attaching said flared portion to the lower part of the humidifier comprising the collecting basin, and by supporting the casing from either the basin itself or said upper flared portion attached to the basin, thereby leaving the cylindrical part of the casing free and disconnected, so that it may be vertically movable.

Spray types of humidifiers are generally installed on a

circulating system, whereby the surplus water is collected from each humidifier and returned to the storage tank, where it is partly filtered and pumped again through the supply pipes and through the heads, usually passing through a separate small strainer attached to each humidifier. It is obvious that this is necessary because nothing short of a very complete filtering of the water, (which owing to its inconvenience and cost would be extremely undesirable), would get rid of all the impurities washed from the atmosphere and collected in the surplus return water. The pumping of this water through the supply pipes without straining would cause the small holes of the nozzle to speedily clog up; and so, small strainers attached to each humidifier are a necessity.



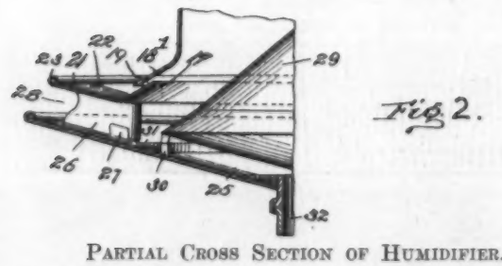


Fig. 2.

PARTIAL CROSS SECTION OF HUMIDIFIER.

On the best forms of these strainers, the perforated surface is made large enough, so that they can be run for quite a long time without requiring any attention. After a while, however, practically all of the holes become clogged and the strainers must be removed and blown out to be cleaned. The arrangement in this humidifier for cleaning the strainers is very unique. By the simple process of reversing the flow of the water through the strainer by the necessary plug cock connections, the pores of the strainers can be blown clear in a moment and without even removing them from their receptacles. The wash waters from the strainers can be disposed of either directly through the same pipe by unscrewing the nozzle, or it can be turned out through a separate opening either directly into the waste water outlet of the humidifier, or in a cone shaped sheet of water, thereby washing down the sides and inner parts of the whole humidifier with a large flow of water under high pressure.

The details of the humidifier are best shown by means of the accompanying illustrations of which Fig. 1 represents a vertical section of the humidifier with the casing in its normal position. Fig. 2 is a detail sectional view of a portion of the lower part of the humidifier.

Numeral 1 indicates the casing of the humidifier which rests normally on the waste water receptacle or basin, and is vertically adjustable so that it can be raised out of the way of the receptacle and its appurtenances to provide ready access to the humidifier for the purpose of cleansing it or removing adhering impurities therefrom.

Numeral 2 indicates a centering and supporting spider secured to the casing and provided with a hub 3, and radial arms 4, attached to a ring 5, to the inside of which the casing is attached by rivets 6.

Numeral 7 is the water supply pipe at the lower end of which, and within the casing I is a spray head 8. The supply pipe is provided with a fitting 7', which is in turn provided with stop cokes 48 and 49.

The casing 1 is vertically movable on the supply pipe 7, and may be secured in an elevated position by a set screw 11 in the hub 3 of the spider.

The humidifier is suspended from the ceiling of the room or an overhead beam by supporting straps. The lower ends of the straps are bent to the proper angle and secured to the water receptacle or basin by bolts 16.

The water receptacle comprises an upper annular basin, below and adjacent to the lower end of the casing, and is provided with an inwardly extending and upwardly projecting flange 17 set at an angle coincident with the angle of the flaring bell-shaped terminal 18 of the casing to provide an annular air passage 19. The flange 17 forms a barrier to water, deflected by the cone or deflector 29, passing laterally out of the casing between the lower end thereof and part 25 of said basin. The basin is also provided with an outwardly inclined flange 21 which extends beyond the casing, and forms an arrester for accumulating lint, "fly," or other impurities which flow down the inside of the wall of the casing and are blown out through the passage 19, and lodge on the flange, from which they may be readily removed when necessary.

The flange 21 is provided with a series of openings 22, through which the water passes down into the lower basin; and at the perimeter of the flange is an annular upturned head 23, primarily for stiffening the flange and at the same time preventing water and the collected lint from being washed out over the extremities of the flange.

On the flange 17 are lugs 24 on which the lower end of the casing 1 rests, and by which the casing is held in proper relation to the remaining parts of the humidifier.

The lower basin 25 collects all the waste water of the humidifier, and is permanently connected to the upper basin by the bolts 16. Between the flange 21, and the basin 25 are spacing members 26, which form conductors for the water which flows through the openings 22, and is discharged into the basin 25 through openings 27 in the walls of said members. The inner ends of the spacing members are closed to prevent the blowing out of the humidifier of the heavy drops of water which flows down from the upper basin into the lower basin.

It will be observed that the air which is discharged

through the annular passage 19, encounters the drip from the inside of the wall of the casing, and is saturated thereby, but the fall of the water from the end of the casing, or the distance between the end of the casing and the upper basin, is so small, and the flange 21 proportionately so wide and inclined upwardly, that no drops of water are blown out into the room over the flange.

The deflector 29 consists of two cones with their bases adjacent to each other and joined together, so that the water which flows down the upper cone is directed toward the center of the basin 25, by the lower cone and is discharged into the water in the basin, so that it can not be picked up by the air in its passage between the basins and carried out of the humidifier. The deflector is detached from the basin 25, and rests upon lugs or supports 30, which engage the bottom of the basin, and the deflector is held against lateral displacement by an annular projection or step 31.

The casing being raised on the pipe 7, the deflector may be readily removed, when the basins and their accessories may be readily cleaned and all collected impurities removed therefrom.

A waste pipe 32 is used for returning water to the supply tank, not shown, to be used over and over again in the humidifiers.

The strainer for the water coming into the humidifier is designated 44. 47 is a plug for inserting and removing the strainer when desired. 48 and 49 are plug cocks. Water entering through the pipe 7 will pass through the plug cock 48 thence into the chamber 50 thence around and back through the strainer 44 into the chamber 51, thence through the plug cock 49 and into the spray head 8. For cleaning purposes by turning the plug cock 48 to cut the water out of the chamber 50 and to turn it into the chamber 51, it will from there pass in a reverse direction through the strainer 44 and out into the chamber 50. By turning the plug cock 49 in either direction, the water passes into the annular umbrella like shaped opening 53, from whence it will issue in a conical sheet with great force, projecting itself against the sides of the casing and thereby washing down the walls and causing a general flushing out of the humidifier.

KNITTING

THE LOOP WHEEL KNITTING MACHINE.

(*Contributed exclusively to* COTTON.)

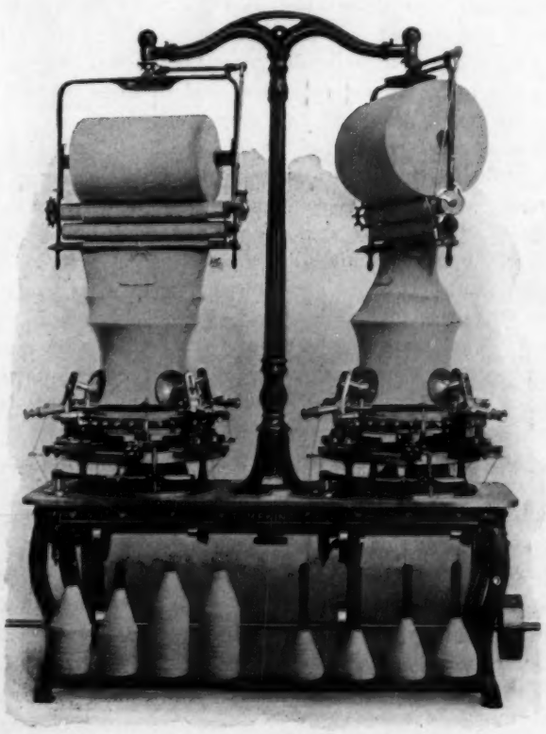
BY ERNEST TOMPKINS.

Plain knitting, regular knitting, or flat work, as it is variously called, is made on one set of needles, either spring beard or latch and may be made tubular or plane. The common machine for making this work is technically called the loop wheel circular spring needle knitter. The name indicates that it does not use latch needles, but it does knit a circular or tublar fabric. Moreover, it has only one set of needles, and these are fixed instead of reciprocating. These characteristics distinguish it from the hosiery machine, the plain latch needle machine, the rib machine—whether spring needle or latch—and all straight machines such as Cotton's, Lamb's, the warp machine, etc. Consequently much of what it can not make is soon resolved—for instance, it can not make hosiery, fashioned work, ribbed goods, nor warp fabrics.

What it can make will be better understood after some knowledge of the principle of the machine is had, and this may be obtained by comparing with it the plain latch needle machine, its younger but more popular rival. In both types, the stitch is formed by means of a hooked needle which draws the yarn through a loop previously made, in which operation the point of the hook is hidden so that the old loop may freely slide over the head of the hook. In the latch needle the point of the hook is covered by a hinged latch opened and closed automatically by the sliding pressure of the last completed stitch.

In the spring needle the hook is long and elastic, and the point is sufficiently sharp to be concealed when pressed down into a groove in the shank called the eye. Evidently the spring needle hook point requires external means to operate it to close the book—that is, a presser has to be used. Moreover, since the spring needle does not reciprocate through the work under operation, the work must be reciprocated on the needle. This is done by means of a push-down for moving the old stitch away from the head of the needle; a sinker for sinking the new yarn under the hook of the needle; and a lander and cast-off which in succession divide the work of raising the old stitch up off of the needle.

Evidently the operation of the latch needle is simpler and consequently requires less space in the needle line, so



LOOP WHEEL KNITTING MACHINE.

that generally more feeds may be used with latch needles than with spring needles. Again, since the spring needle machine has more accessories, more skill is required in its adjustment and operation. On the other hand the spring needle machine may be made in finer gauges, and since the needle is less clumsy it spreads the stitch less, thus making more uniform loops in this regard. In latch needle machines fourteen cut is regarded as fine, whereas, spring needle machines are practical as fine as twenty-seven cut, or forty gauge. The needle for this work is .019 inch diameter, and its greatest thickness through the head is .025 inch.

The stitch forming mechanism of the spring needle machine is entirely rotary, as well as all the rest of the mechanism except the take-up, feed, and the stop motion, which two latter features are of so little importance, as far as the speed is concerned, that the machine may be regarded as purely rotary and therefore ideal as far as motion is concerned. Indeed, it is this characteristic which has kept the machine in favor for a century, as the attendant advantages of high speed, low friction, freedom from jar, and great durability are highly desirable.

The speed limit of the machine as a mechanical device is far beyond that at which it can be run commercially, differing in this regard from latch needle machines in which the friction is the important speed limiting feature. It will thus be seen that although the spring needle machine is generally equipped with less feeds, its greater speed brings up the production as high or higher than that of the latch needle machine. It is safe to say that no reciprocating needle machine has produced 400 men's shirts per day per cylinder, yet it is a daily commercial production with the spring needle machine for work favorable to it. The durability of the spring needle machine is practically unlimited, since there are in successful operation to-day machines built over forty years ago and operated continuously ever since. Not long ago the cylinders were rebored and reamed and the burs rebushed, so that to-day the needle line is undoubtedly truer than it was originally, since the tools and methods now used in these operations are superior to those of two score years ago.

The spring needle machine is more flexible than most and probably any other knitting machine. Among the changes readily made at comparatively slight cost are those of gauge, diameter of work, number of feeds and kind of work. The range of practical gauge is from 8 to 40 (5.3 needles per inch to 27 per inch). The cylinder range is from 66 inches to 8 inches, and even 2½ inches in some makes. The maximum number of feeds for flat work ranges from one for every two inches diameter of cylinder, to one for every three inches diameter of cylinder, that is, 6 feeds on an 18-inch cylinder.

Among the disadvantages of the domestic spring needle machine are its bulk and weight, and the skill required to adjust and operate it successfully. Some of the work to which it is adapted is flat underwear in wool, cotton, or percentages, either single thread, multiple thread or fleeced; webbing in the piece for rubber linings, glove linings, dress shields, etc.; astrakhan for cloaks, robes and trimmings; fur cloth for coats, robes and rugs; and other minor uses too numerous to mention.

The mills in New Bedford, Mass. use annually about 240,000 bales of cotton.

A FANCY INTERKNIT RIB FABRIC.

The principal object in view is the making of a ribbed fabric which has more body between wales than has the regular ribbed fabric, which result is accomplished by employing two interknit webs as distinguished from interlocked webs.

Another object is the production of an elastic, ribbed fabric susceptible of affording variable color effects, the inner face presenting one effect and the outer face another.

A further object is the production of a double web interknit fabric, a generic embodiment of which comprehends a two and one wale fabric having independent ribs on one face and interknit composite ribs on the other, so that the finished fabric is formed with double the number of wales on one face as on the other, the two wales of one face being arranged between each two of the wales of the other face, and each wale of the face having the less number of wales is made up of twice as many loops as there are loops in any one of the wales of the other face.

Expressed more specifically it is a double web, interknit, one-and-one fabric, knit of two sets of yarn and having on the outer face alternate ribs of different yarns, each rib being knit from the same set of yarns as the next alternate rib, and the next immediately contiguous rib being knit of a different set of yarns, the ribs of the inner face being each interknit of yarns first of one of the sets of yarns and then of the other set of yarns, so that on the outer face, when the yarns of one set are of one color, and the yarns of the other set are of another color, the ribs present alternate stripes first of one color and then of the other, while each of the ribs of the inner face forms a motley colored stripe variegated with the colors of the successive alternate yarns, only one loop appearing in each rib of the inner face for one loop of each rib of the outer face, and each inner rib being formed of a single needle wale and each outer rib similarly formed.

To produce the fabric seen in Fig. 1 two yarns are fed

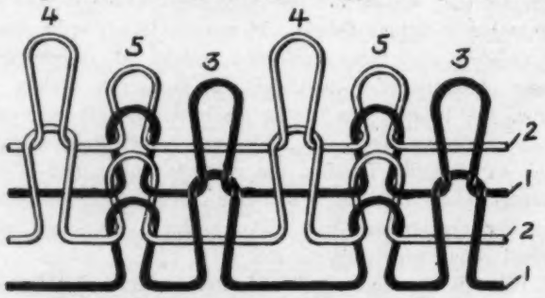


FIG. 1. DIAGRAM OF AN INTERKNIT FABRIC.

to a dial machine in which alternate dial needles are retained constantly active, and the other dial needles constantly inactive, the cylinder needles being divided into two sets, each consisting of every other needle about the cylinder, and the sets operating alternately with respect to each other, the first set after knitting being held in its lowered position and retaining its loops while the second set knits and is lowered, and then retained inactive as the first set again becomes active. As the set of dial needles which is active operates continuously and takes yarn from both feeds, alternating from one to the other throughout the operation, while the cylinder needles have the first set acting on the first yarn feed, and the second set acting with respect to the second yarn feed, the resulting fabric consists of two webs, one knit by one set of cylinder nee-

dles and the active dial needles, and the other knit by the other set of cylinder needles and the same dial needles, the two webs being thus interknit, as distinguished from interlocked as heretofore proposed in some fabrics. Thus all the dial needle wales are made of loops taken alternately from both yarns while the cylinder needle wales are each formed from a single yarn, each independent of the other, and the wales of one yarn successively alternating throughout the fabric with the wales of the other yarn.

Each dial needle wale or wale on the inner face of the fabric forms a rib, and occurring between each two of the inner wales or ribs are the two cylinder needle wales on the outer face of the fabric, which by reason of the interknitting of the inner face wales are twined and form a single rib of substantially double the width of each inner rib. Thus it will be seen that if different colored yarns are used, say white is fed to the first set of cylinder needles and red to the second set of cylinder needles, the outer face of the fabric will present ribs, each formed of a needle wale of red and a needle wale of white, alternating throughout the fabric, while the inner face presents a continuous series of ribs each formed of a single wale made up of a loop of red and then a loop of white, and so throughout the length of the wale. This interknitting of the two webs obviously results in the crossing of the sinker wales of the successive courses, and more body is thus given to the fabric between ribs, and, by this method of interknitting, a more permanent elasticity of the fabric is secured than in the interlocked web fabric, and a finer mesh obtained than ordinarily with the same gauge of machine.

Referring to Fig. 1, 1 represents the yarn fed to the first set of cylinder needles, and 2 the yarn fed to the second set of cylinder needles. It will be seen that one of the first set of cylinder needles knits a wale 3, while the next contiguous cylinder needle of the second set knits a wale 4, and at the same time the dial needle which operates between the contiguous cylinder needles of the first and second sets produces a wale 5, which consists of the interknit yarns 1 and 2, twice as many loops being thus drawn in by each dial needle as by any one of the cylinder needles, so that each wale 5 is made up of twice as many loops as either wale 3 or 4, or in other words, each wale 5 represents the sum of loom produced by any two cylinder needles. The resulting fabric is a two-and-one wale fabric, an outer rib being made up of two wales.

In carrying out this generic idea of fabric in more specific detail to produce the species disclosed in Fig. 2, all of the dial needles are thrown into operation, and the operation of one set of dial needles will alternate with respect to the other and with respect to the two sets of cylinder needles. To accomplish this result, two yarns, preferably of the same kind, are fed successively to the needles of each set of cylinder needles and each set is alternately so fed, and the first set of dial needles operates first with respect to one yarn being fed to the first set of cylinder needles and then with respect to one yarn being fed to the second set of cylinder needles, immediately following which the second set of dial needles operates first with respect to the other yarn fed to the first set of cylinder needles, and then with respect to the other yarn fed to the second set of cylinder needles; after which the first set of dial needles again comes into operation and acts with respect to the first set of cylinder needles and then with respect to the second set of cylinder needles as before.

The second set of dial needles, of course, remains inactive, the needles holding their loops, while the first set of dial needles is active and vice versa; and also the second set of cylinder needles remains inactive while the first set of cylinder needles is operating and vice versa. In carrying out this particular operation, four yarn feeds are provided, as for instance, a yarn 6 and a yarn 7, constituting a set of yarns for the first set of cylinder needles, are fed successively to said first set of cylinder needles, while a yarn 8 and a yarn 9, constituting a set of yarns for

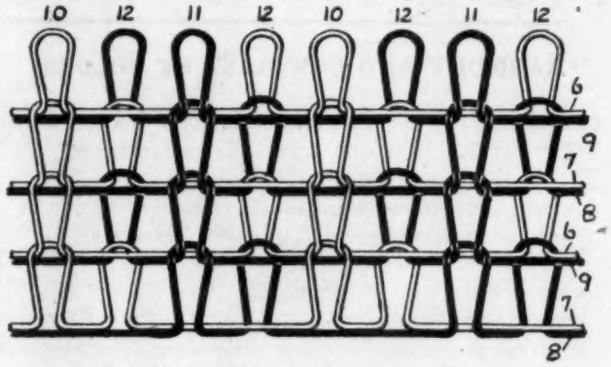


FIG. 2. DIAGRAM OF AN INTERKNIT FABRIC.

the second cylinder needles, are fed successively to said second set of cylinder needles, whereby the fabric, such as seen in Fig. 2 is produced, the yarns 6 and 7 being knit by the first set of cylinder needles into wales 10, while the yarns 8 and 9 are knit by the second set of cylinder needles into wales 11, the wales 10 and 11 appearing on the outer face of the fabric, while between each two of the cylinder needle wales 10 and 11 a dial needle wale 12 is produced on the inner face of the fabric by the respective set of dial needles, both sets of dial needles producing the same kind of wale.

Each of the dial needles of the first set in operation draws in first a yarn 6 and then a yarn 8, and the dial needles of the second set then draw in yarn 7 and then yarn 9, and then the dial needles of the first set again draw in yarn 6 and then yarn 8, and so on, alternating in sets throughout the operation. Thus the first set of dial needles acts first with respect to the first set of cylinder needles and then with respect to the second set of cylinder needles, and the second set of dial needles then similarly acts first with respect to the first set of cylinder needles and then with respect to the second set of cylinder needles, whereby the two sets of dial needles not only operate alternately with respect to each other, but also alternately with respect to each of the two sets of cylinder needles.

The color of the yarns may of course vary as desired, but when it is desired to produce uniformity of color effects of the outer face of the fabric, the yarns 6 and 7 are of the same color, and the yarns 8 and 9 may differ in color therefrom, but are of the same color with respect to each other, whereby the wales 10 are all of the same color, and the wales 11, though differing in color from wales 10, are all of the same color with respect to each other, while each wale 12 is made up of loops from two yarns drawn successively and alternately from the two sets of cylinder needle yarns, one yarn from each set, and thus the colors in each wale 12 are variegated, giving a motley effect to the inner face of the fabric. Each wale 12 also contains exactly the same number of loops as either wale 10 or wale 11, which is due to the fact that an equal number of dial needles and cylinder needles are caused to operate in pro-

ducing this specific form of fabric. In this connection it is to be noted that the cylinder needles take yarn alternately from the two yarns of their own sets only, that is, the first set of cylinder needles alternately takes yarn 6 and 7, while the second set of cylinder needles takes yarn 8 and 9, alternately. Each of the first set of dial needles takes a yarn 6 and then a yarn 8, and each of the second set of dial needles takes a yarn 7, and then a yarn 9. The resulting fabric is a one-and-one rib fabric, each rib being formed of a single wale, with internal thread floats joining certain non-adjacent wales of the two faces.

DYEING, BLEACHING AND FINISHING

HARMONY AND CONTRAST OF COLORS.

COMPLEMENTARY COLORS. THE CHROMATIC CIRCLE. COLOR FATIGUE IN DAILY LIFE. COLOR CONTRAST.

(Contributed exclusively to COTTON.)

BY DAVID PATERSON, F. R. S. E., F. C. S.

PART II.

In the preparation of these articles on color harmony, I have been much helped by the many excellent books and scientific contributions dealing with color; especially the writings of Abney, Benson, Chevreul, Church, Helmholtz, Ogden, Rood and Ward, and to these I tender my hearty acknowledgments. At the same time much of my own original work will be found incorporated in these articles.

COMPLEMENTARY COLORS.

In the last paragraph of our article in the February issue was described the simple experiment of looking steadfastly for a minute at any bright color and then on to a white sheet of paper, when a negative image is seen of a color complementary to that of the original color as shown diagrammatically in Fig. 1.

BY LOOKING AT	WE SEE AN AFTER IMAGE OF
Blue	Yellow.
Green	Purple.
Yellow-Green	Purple Violet.
Orange	Greenish Blue.
Red	Green Blue.
Orange Yellow	Turquoise Blue.
Greenish-Yellow	Violet-Blue.

It is an excellent study for the color student to make a series of such simple experiments for himself, record them in his notebook and then compare the results he has found himself with those given in the various text-books on color. This phenomenon of "successive contrast" of color, so-called because it is observed on looking successively from one color to another, comes into play while viewing all kinds of color, either one after another, or simultaneously side by side. All colored compositions whether they be paintings, carpets or any colored textiles, are influenced by this modifying effect of contrast. The pairs of colors given above, such as green and purple, yellow-green and purple-violet, etc., are termed "complementaries," because one complements or completes the other in order to produce *white* and accordingly the one *harmonizes* with the other.

One of the principles to be borne in mind in harmonious coloring is that the eye delights in the presence of the three sensations; red, green and blue. There are several laws relating to the production of pleasant and harmonious color effects, and these we shall study in due course. The cause that gives rise to these complementary colored after-images is explained by the Young-Hemholtz theory of color sensations. According to this accepted theory there are present in the retina of the eye three sets of nerve-fibers or "cones" as already described in the preceding article. One set of nerves is sensitive particularly to the light impulses producing the sensation of *red;* another set of nerves is specially sensitive to *green* impressions, and the third set to *blue;* or to be more particular, a blue-violet. These form the three primary color sensations, and all the different colors we see are produced by the infinite variety of combinations of these three colors.

If a bright red be viewed for a few minutes, it will be seen to get duller in appearance; the "red" nerve fibrils of the eye become tired with the excessive excitement, and are less responsive. If the eye be then turned to look on anything white, a strong greenish blue after-image is seen, which persists perhaps for a few minutes and then gradually goes away. This green blue image is due to the other two nerve fibrils—green and blue—acting together, while the other one is too fatigued to respond. We have to remember that *white* consists of red, green and blue in such proportion that all the three color nerves are equally excited.

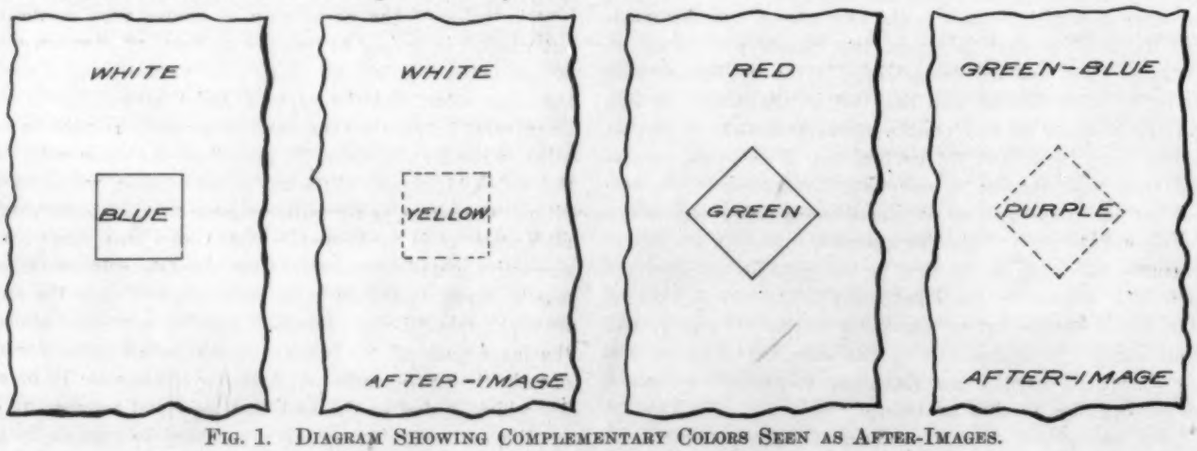


FIG. 1. DIAGRAM SHOWING COMPLEMENTARY COLORS SEEN AS AFTER-IMAGES.

If we view a bright turquoise blue, such as Patent Blue N, or Cyanine blue, for a short time, and then look to white, we see an orange yellow image (the complementary color to a greenish blue). This again is due to the blue and green nerves becoming fatigued; but the blue ones more than the green, and the result is that on looking at white, we see white, minus all the blue and a little green, which leaves an orange-yellow.

Then again, by viewing a yellow for some time we see a blue color after-image. This illustrates the interesting fact that the sensation of seeing a yellow is produced by the optical combination of red and green. However, if we combine red and green paints or dyes, one absorbs or counteracts the other, and the result is a dull olive grey color.

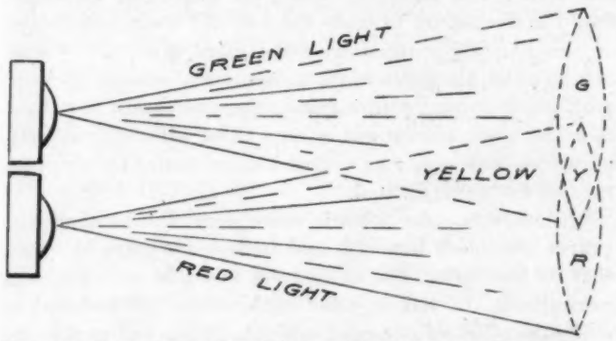


FIG. 2. GREEN AND RED LIGHTS COMBINED TO FORM YELLOW, THE COMPLEMENT OF BLUE.

But by combining their lights, by rotation on the revolving disk we obtain a yellow. For example, if a disk is painted one-half green and the other half red, and it be rapidly revolved so that the two colors mingle on the retina, the effect is a yellow color. A little experience in manipulating the strength of the pigments is required to show a satisfactory result. The same result, but very much better, is obtained by superimposing a disk of red light from a lantern upon another disk of green light; where the lights overlap each other, yellow light is produced, as shown in Fig. 2.

Therefore, in gazing at a bright yellow for some time and then looking immediately at a white sheet, the negative image is *blue*, because the red and green sensitive nerves have become fatigued and only the blue ones are active and give the sensation of seeing the blue after-image. After a short time the eye naturally recovers from its fatigue and we then see white as white. And so on, all the interesting phenomena of successive colors images can be explained by the Young-Helmholtz theory of the three primary color sensations of red, green and blue; and the three sets of nerves each specially sensitive to its own color.

The following is a list of complementary colors. Each pair, if combined together, would form white light.

COLOR.	COMPLEMENTARY.
Red.	Green-Blue.
Orange.	Cyan-Blue (a greenish blue.)
Yellow.	Blue.
Yellow Green.	Blue.
Green.	Violet.
	Purple.

It is well known among those whose business it is to examine colored goods, such as dyed or printed cloth or calicos, that the eye loses its sensibility after viewing a color for a certain time; and what is more, if the observer passes from viewing one color, say red, to another color, say green, the green is altered in appearance from the effect of previously looking at the red.

I will give here a short list of some of the changes visible in passing from one color to another.

AFTER LOOKING AT	AND THEN AT THE LATTER APPEARS	
Red	Orange.	Yellower.
Red	Green.	Bluer.
Red	Blue.	More intense.
Green.	Red.	More purplish.
Green.	Orange.	Redder.
Green.	Blue.	More Violet Blue.
Blue.	Red.	More Orangy.
Blue.	Yellow.	More Intense.
Blue.	Green.	Yellowish Green.

THE CHROMATIC CIRCLE.

As an intimate knowledge of these simple complementary colors is most valuable to colorists, and all whose duty it is to arrange colors in their most harmonious combinations, it is well worth the trouble of the student to make for himself a color circle. Fig. 3 is a diagram showing how this can be done. Around the circumference of the circle are placed at equal distances, the three primary colors—red, green and blue; and three diameters drawn from these points will show exactly the position of the complementary colors. Thus at the end of the red diameter is found green-blue and so on. Between the three primaries and their complementaries are the intermediate hues—orange, complementary to *Blue-Green-Blue;* yellow-green to *Violet;* and green-blue-green to *Purplish-Red.* It is an excellent idea for the student of color harmony to color such a circle himself with his box of paints, and he will then be possessor of a valuable guide to harmonious coloring. The harmonizing complementary to each color will be seen opposite at a glance, and the eye and mind will be trained in the appreciation of color.

Such a color circle, but with the complementaries slightly different, and on a large scale, was prepared by the eminent French chemist, M. E. Chevreul, of Paris, with dyed wools. It contained nearly 3,000 dyed colors with their shades and tints and represented a monument of laborious work. We are indebted to Chevreul for the laws of color harmony. His monumental work on "The Harmony and Contrast of Colors" covers the whole field of color in its application to the arts and industries, and he first laid down in the form of laws the various principles that govern the harmonious combination of colors, and their influence upon each other. His work was based on the red-yellow-blue theory of primary colors and many of his color terms accordingly require to be slightly altered or adjusted to suit the red-green-blue theory of color sensations.

EYE COLOR FATIGUE IN DAILY LIFE.

The experiments showing color fatigue of the retina previously described, become of real interest and importance when experienced in every day life. All colorists, who have to examine carefully large expanses of color material, such as dyed cloths examiners, dyers and cloth inspectors in factories, experience more or less of this inconvenience. The eye becomes fatigued by always looking at the one color, and less sensitive to observe differences of tone or faults of dyeing. For example, a cloth inspector in a mill, whose duty it is to look for hours at a time on material dyed Turkey red, or scarlet, or, pink, or bright green, finds that after a short time, these colors begin to appear dull

and wanting in richness. This is all due to the fatigue of the color nerves, and in order to quickly restore them to their natural condition, it is necessary to gaze for a second or two, now and again, on a colored material complementary to the hue being examined. For example the inspectors of Turkey red dyed cloth have beside them a piece of green-blue cloth which restores at once the eye to its normal condition, and so on, according to its complementary hue.

COLOR CONTRAST.

In studying the complementary colors, we are naturally brought to the subject of contrast, or the effect that one color has upon another. We are now well acquainted with the change that will take place in the appearance of a color

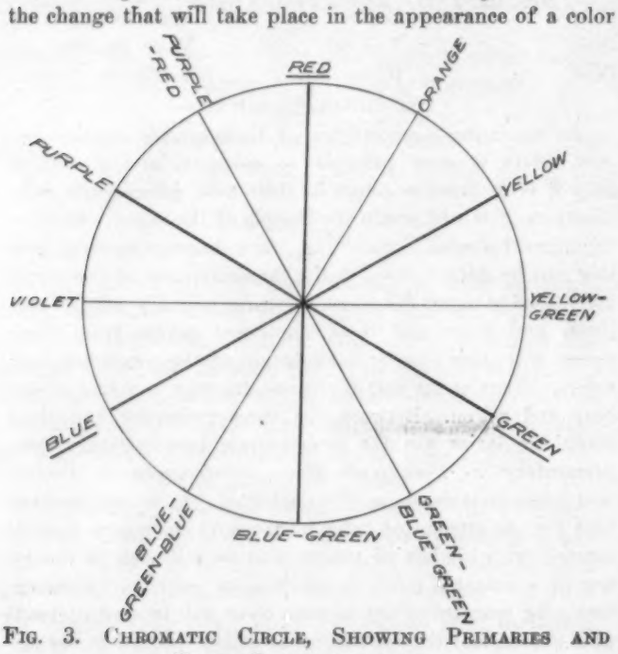


FIG. 3. CHROMATIC CIRCLE, SHOWING PRIMARIES AND THEIR COMPLEMENTARIES.

when we have viewed another color just immediately before. If we look at red for a few seconds and then at yellow, the latter takes a greenish tinge and appears a greener yellow, than it really is. So that a buyer, after examining say a lot of red colored material, and then looking at yellow material will say that the yellow is not a good yellow, but is greenish in hue. Such instances often occur.

In the same way, if we look directly from viewing orange colored goods to blue material, the blue will appear much brighter and greener than it really is, being influenced by the complementary green-blue arising after seeing the orange. Such effects as these are termed "successive" contrast of color. But, in instead of viewing the colors successively, they be placed side by side, or in juxtaposition and viewed simultaneously, each color will influence its neighbor, improving or diminishing each other's beauty according to their nature.

Let us for example, examine two colored patterns or prints of simple design. Let us suppose the first has a turquoise blue ground with red spots, and the other has a yellow ground with identically the same red colored spots. In first pattern the red spots will appear brighter and more approaching a scarlet, more orange in hue, from the influence of the turquoise blue-ground; while the spots in the second pattern will look much flatter and bluer, and more of a crimson hue than those in the first pattern, due to the influence of the yellow. So that it is possible to have two identical colors appearing different because of their surroundings.

Then again in a simple design in which blue appears on a rose-pink ground, the blue assumes a greenish hue from its proximity with the pink. It was examples such as these that first set Chevreul to study the whole subject of color contrast. He was called upon to superintend the dyeing department of the famous Royal Gobelins tapestry works in Paris, and while there received complaints that sometimes the blacks employed in the tapestries were not good blacks. He soon discovered that the fault lay not with the blacks, but they were changed in appearance by the colors that were next them; in other words the effect of simultaneous contrast. In my own experience a complaint was once made that small black figures in a carpet were not black, but a rusty brown-black. The ground of the design was a deep rich shade of dark green. Nothing would induce the complainer to understand that it was the influence of simultaneous contrast with the green ground. It was only after all the green in the patterns was covered up with grey paper so as not to influence the eye, that it was seen how the rusty brown was a true black after all, and its brownness was merely an optical illusion caused by the presence of the green ground.

In order to make a black under such circumstances appear a true black it would need to be made much bluer, so that the red effect due to contrast would be overcome and neutralized. In making color combination it is essential to study the effect of one color against another and so arrange them that they enhance and enrich each other, rather than impair each other.

The following is a list of some of the color combinations and their influence upon each other adapted from Chevreul with a few slight corrections:

Pairs of Colors	Changes Due to Contrast
Red, beside Orange	inclines to Purple / " " Yellow
Red, beside Yellow	" " Purple / " " Green
Red, beside Blue	" " Orange / " " Green
Red, beside Violet	" " Orange / " " Blue
Red, beside Purple	" " Orange / " " Blue
Orange, beside Yellow	" " Red / " " Green
Orange, beside Violet	" " Yellow / " " Blue
Orange, beside Purple	" " Yellow / " " Blue
Yellow, beside Blue	becomes enriched / becomes enriched
Green, beside Blue	inclines to Yellow-Green / " " Violet
Green beside Violet	" " Yellow-Green / " " Purple
Purple, beside Green	becomes enriched / becomes enriched
Violet, beside Blue	inclines to Green / " " Purple

I have dealt rather fully with the subject of complementary colors, because this undoubtedly forms the very basis of all good color training. In an intimate knowledge of the complementaries with their shades and tints lies the very root of the whole matter of color harmony. With this we have a sure and valuable guide through all the intricacies of pleasing and harmonious coloring. But the ultimate reason why some color combinations should be more pleasing to our senses than others is too deep a problem to enter into in these columns. That is a question more for the psychologist than the physicist. It goes deep down to the very depths of our being, into all the subtle mental influences and inherited tendencies and tastes that go to make up the sum of our life.

(To be continued.)

Practical Problems Discussed by Cotton's Readers.

Discussions of Mill Problems are Solicited for this Department.

PRIZE CONTEST WINNERS.

Especial interest is attached to the results of the prize letter contest, conducted by COTTON, which closed on May 1st, owing to the many contestants who entered competitive letters, and the large number of prizes given. Competitive letters were received from mill managers, superintendents, overseers, second-hands and operatives. The general excellence of the letters, in giving important information based upon practical experience and re-inforced with a technical knowledge of the subjects treated, will be fully appreciated as they appear in these columns.

It is very noticeable at conventions or other meetings of mill men, how eager those vitally interested in the operation of the mills are to discuss the various troubles which have come within their every day work in the performance of their duties. Such discussions always prove valuable to those fortunate enough to join in them, as no one can foresee the many problems that come up every day in the mill, and the experience of others forewarns a man of what he may expect at any time.

Progressive mill men have found that occasional letters discussing mill problems are not only of benefit to readers but are of advantage to them in many ways. We feel sure that the millmen in the following list of prize winners will not only feel repaid for their efforts by receiving prizes, but will have the satisfaction of knowing that each had a good idea and knew how to convey it to his fellow-worker; the prizes were sent to the winners on May 17th:

PRIZE CONTEST WINNERS.

1. MARCELLUS GOULD, Penacook, N. H.
2. W. W. BECKNELL, Ashcraft Cotton Mills, Florence, Ala.
3. GEO. E. SCHERMERHORN, Lowell, Mass.
4. E. C. BENNETTT, Baltimore, Md.
5. W. C. HALL, Valatie, N. Y.
6. WM. T. WESTCOTE, New York City.
7. W. F. HENDERSON, Swift Mills, Columbus, Ga.
8. C. P. BRANNIN, Dallas, Tex.
9. WILLIAM SHAW, Border City Mills, Fall River, Mass.
10. O. A. BARRINGER, Rockwell, N. C.
11. ROBT. W. BOYS, Newmarket Mfg. Co., Newmarket, N. H.
12. A. M. MACADAMS, Taunton, Mass.
13. JOS. S. BOUCHER, Anthony, R. I.
14. J. C. EDWARDS, Anchor Duck Mills, Rome, Ga.
15. H. O. DAVIDSON, Woodstock Cotton Mills, Anniston, Ala.
16. J. H. STILLWELL, Gastonia, N. C.
17. E. A. SCOTT, Ashcraft Cotton Mills, Florence, Ala.
18. D. R. SHEARER, Copperhill, Tenn.
19. G. B. MCCRAKEN, Mobile Cotton Mill, Mobile, Ala.
20. W. E. WILLIAMS, Tennille Yarn Mills, Tennille, Ga.
21. C. L. HARRIS, Newberry, S. C.
22. A. A. BELVILLE, Winchester, Mass.
23. ARTHUR A. DAVENPORT, Lockport, N. Y.
24. HENRY LEIGH, Hoskins Mills, Charlotte, N. Y.
25. ERNEST WHITWORTH, Southbridge, Mass.
26. MILTON SHAW, Fall River, Mass.
27. JNO. T. IVERS, Middletown, Conn., 316 Elm Ave.
28. H. E. WHITE, Baltimore, Md.
29. D. W. LANCE, Monticello, Ark.
30. EUGENE HERRING, Lindale, Ga.
31. PERCY W. PRICE, Greenville, N. H.
32. MICHAEL T. SULLIVAN, Pawtucket, R. I.
33. C. P. THOMPSON, Trion, Ga.
34. HARRY KENDALL, Lowell, Mass.
35. J. M. KENNEDY, Anniston, Ala.
36. JNO. J. BATES, Fries, Va.
37. F. L. BRANNEN, Magnolia, Miss.
38. J. H. YEARTY, Savannah, Ga.
39. W. M. SUTTLES, Cox Mills, Anderson, S. C.

INDIVIDUAL VS. GROUP ELECTRIC DRIVE.

EDITOR COTTON: Feeling certain that you are desirous of having the articles in your papers discussed and thus spreading about information to the utmost, I am taking the liberty of replying to the article of John W. Fox on the "Individual versus Group Electric Drive," as published in your issue of March, 1910.

With reference to the spinning room as shown in Fig. 1 in that article, I can not understand how the belting is run so that it would require two idler pulleys. The ordinary layout of a spinning room such as indicated, would be a long line of shafting of sufficient length to handle the number of frames which would be operated by a 100-H.P. motor. This is approximately 24 frames, and the shafting would be somewhere around 90 feet in length. To operate each pair of frames would require one driving pulley fastened to the shaft, from which the belt would run down around the pulley on one frame, up to an idler pulley on one shaft, down to the spinning frame and around its pulley and up to the driving shaft thus requiring but one idler pulley to each pair of frames. If this idler pulley was on a quill of sufficient size and properly lubricated, the power lost in it would be exceedingly small. It should not require over 1 H.P. to drive this line shaft without load, and not over double this to drive it under load, if the bearings were all properly taken care of and the shafting properly lined. There would, however, be a considerable slip in the belts, so that the efficiency of the drive, including shafting friction, idler friction and slip—would probably be in the neighborhood of 15 per cent.

Under these conditions it would seem as though the figures given for the cost of countershafts and installation are a little large. In fact, we can not see any necessity for 36-inch pulleys being over 4-inch face, or any requirement for the 6-inch belt, as the entire line of shafting should be operated by one motor either in the center direct coupled to the shaft, or by one belt drive, preferably, however, by chain drive, which, although more expensive in first cost, is more efficient than the belt in operation. This being the case, the cost of the shafting for 24 frames, including all pulleys, hangers, and belts, should not be over $1,080. According to quotations in the East, the motor should cost about $700, belting between motor and shaft $104, installing the motor $300, making a total cost of $2,180 for the cost and installation of the drives for the 24 frames. The total efficiency, including that of the

motor, will be approximately 25 per cent., as the motor efficiency should not be less than 90 per cent.

For the individual drive, we would require 24 motors of 5 H.P. each, which would cost approximately $90, including gears, brackets, oil switches, etc., or $2,160. For the wire and installation of the above, if $300 is required in that section for a single 100-H.P. motor, we should consider that $500 would be necessary to wire and install 24-5-H.P. motors, as the smaller motor would be wound for 440 volts, while the 100-H.P. would be wound for 2,200, greatly decreasing the size of the wire required for the installation. In addition to this, we should have to add the cost of the transformer capacity necessary to furnish power to these low voltage motors, making a total of approximately $3,600 for the individual drive against $2,200 for the group drive. As far as efficiency is concerned, the 5-H.P. will hardly show better than 85 per cent. at full load. There will also be the loss in the gearing and the loss in the transformers, so that under its best conditions the drive would hardly do better than 20 per cent. It is to be noted, however, that these motors are as a rule operated on considerably less than full load, as will readily be seen from the fact that a 100-H.P. motor is capable of handling 24 frames, including all of the friction losses in shafting and belting; whereas 120 H. P. in motor capacity is required on the individual frames. This is readily accounted for by the fact that in ordinary operation a certain proportion of these 24 frames are stopped in order to take care of their production and keep them running smoothly and properly. This factor is taken care of in the group drive by the installation of a motor suitable for the average condition of the drive, allowing the overload capacity of the motor to take care of any excess in the number of frames over the average that happen to operate at any one time.

With the individual drive, however, the full capacity of the motor is required to start the frame; but after the frame is in operation, considerably less than the full capacity is necessary, so that the motor is operating at less than full load when the frame is in good operating condition. There may be cases which will require that the motor be working up to its capacity a considerable portion of the time, but this is not usually the case. On those frames which are shut down, either the motor must shut down or be running under no load. In the first case, more than the average amount of power is required when starting up; and in the second, power is required to keep the motor running so that the efficiency of the drive is by no means that of ordinary full load condition.

Taking these items into account, it is very doubtful if the electrical and mechanical efficiency of the individual drive is as good as the electrical and mechanical efficiency of the group drive, if the latter is properly taken care of and operated. The first cost of the group drive is greater for an equivalent number of frames being driven.

I do not wish to be considered in favor of either the group or the individual drive, as I have no preference, being guided entirely by what seems best under the conditions of the installation. In many instances, I believe the individual drive is superior to the group drive, and in most new mills decidedly the thing to install, not, however, on the score of increased efficiency or decreased first cost, but on the score of increased productive capacity. In the individual drive there is no slip between the motor and the frame, and the productive capacity of the frame is constant. In the group drive, however, there is a considerable slip between the motor and the frames, this slip increasing as the number of frames increases, and also depending very largely on the condition of the drive. The larger the slip, the greater the loss in productive capacity; and with vertical belts, unless they are carefully watched, this slip is likely to be a serious item. Therefore, I believe that the individual drive is superior to the group drive in a new plant. When, however, it comes to the installation in an old plant, the question simmers down at once to whether or not the increased production would pay for the increased cost of the installation and the discarding of the present methods of drive. This can only be settled by a careful study into the conditions in each individual plant.

It should be noted that the drive efficiency on each floor or on each line shaft in the group drive plant, is not as a rule any better than the efficiency of the floor under the ordinary belted plant. The only advantage in the group drive over the older method of drive is the avoiding of the cumulative losses due to friction and slip which existed under the old condition. With a motor drive, the losses are additive. With the old belt drive the losses were cumulative; and although the individual losses in each case may be the same, the total loss under the belt drive was very considerably greater. In addition to this, the slip in the belt drive was also cumulative and increased from floor to floor as you got farther and farther from the engine. The slip, however, on a motor drive of the group variety is like the efficiency, only additive, so that there is a saving in power through the introduction of the electric drive, although the individual floor efficiencies may not be improved. There is also an increase in productive capacity, although the slip and loss in the individual shafts may not be improved; and under conditions of fractional production, the power required to drive the mill may be materially decreased by the cutting out of motors, shafting and machinery.

HENRY D. JACKSON.

POINTS ON LATCH NEEDLE KNITTING MACHINES.

BY E. C. C.

I would like to discuss the latch needle knitting with your readers. Judging from my experience with knitting machines, I consider the latch needle machine the most important of any type of knitting machine. In my opinion, it requires more attention than any other, is the most sensitive, and is easy to get out of adjustment. There are many who call themselves knitters, but few who understand the machine as they should. I have been acquainted with the machine for years, and there are times when I think I do not understand it perfectly.

One of the most important things to remember about a machine is to keep it well oiled. The needles should be oiled twice a day; the results will surprise you. I should advise that it be one man's business to keep the machines oiled. Care should be taken to put the oil on the butts of the needles and not on the cloth. The belts should not be kept too tight. A word to the wise is enough. The body machine should be taken apart at least once a year, and all parts cleaned out. The needles should be looked over and

all bad ones taken out. The sleeve or cuff machine, being small, ought to be taken apart three or four times a year, that is, the dial and cap; the cylinder would run a year all right. The needles will also need some attention.

All machines should be numbered and when they are taken apart they should be recorded. While the machine is dismantled, the cams should be examined and as far as possible kept in their original shape. If you want an example as to how the cams ought to be, I would suggest that you copy the cams found in the Wildman cylinder. In any years of experience as a knitter I think they have the right cylinder cam. The dial cam is all right, but I think the center of the dial stitch is a little sharp.

COTTON CARDING.

BY C. H. W.

Carding is, without a doubt, the most important process in the entire mill. It is the very foundation for good work. It separates the fibers from each other and from the trash that has been left in the cotton after it has passed through the gin, openers, breakers and lappers. If the carding is poorly done, the work throughout the mill will, of necessity, be poor; but if it is performed correctly, all will be well. The card clothing is the principal part of the card, which is a mechanical invention that carries the cotton through or between two surfaces clothed with wire teeth which separate the fibers from each other. Some carders differ as to the best grade or make of clothing to be used, but always buy the best card and clothing obtainable; the principles are the same in all.

Cards require skillful and careful attention; if they are not properly clothed, ground and set, bad work will be the result. The card grinder should be a very careful person; if he neglects the slightest details of his work, the other departments will suffer. Clothing a card is a very particular operation and should be done by one who is absolutely familiar with that class of work, but if the mill has a card clothing machine any person of ordinary intelligence may do the work by the exercise of care. The fillet is generally put on the front of the card, beginning at the left-hand side; the pressure should be about 170 to 180 pounds for the tail ends; and 250 to 300 pounds for the central part of the card.

In setting the flats on a revolving flat card, care should be taken to set them on an angle with the cylinder. This leaves the edges of the flats higher where the cotton comes in contact with the flats; the cotton will be combed out better and the wire will not get loaded as much as it otherwise would.

The grinding of common flat cards is generally done by one grinding roller working on both the cylinder and doffer, though better results might be had by grinding each one with a separate roller. Do not feed a card as heavily with long staple as with short staple cotton. The speed of a 50-inch cylinder should be about 165 revolutions per minute and proportionately greater for smaller ones. The speed of a 24-inch doffer should be from 12 to 15 revolutions per minute. Laps should not weigh more than 14 to 16 ounces per yard. The card sliver should weigh from 55 to 68 grams per yard and the draft should be from 80 to 100.

Proper care and special attention should be given to revolving flat cards. Grinding, setting, stripping and keeping the card neat and clean are very importtant. Poor spinning and weaving will be the result of neglected cards. The grinder rollers must be closely inspected and if there are any defects, remedy them at once, as the surface ground takes its form from the surface that grinds. The flats are ground in working position while the card is running. The full length roller is preferable for grinding the flats on a revolving flat card; it gives a steady contact with the flats and is always in position to grind every flat that passes under it the same at all points. It should traverse 1½ or 2 inches.

Carding is the last process of separating the fibers and forming them into a sliver ready for the drawing frames. It is very important because of a considerable amount of fine substance in the cotton and an abundance of short and tangled fibers that require attention. Modern cards are supplied with one roller and a dish plate. The plate is curved so as to be concentric with the feed roller, so the bite of the licker-in is much shorter and less liable to pass lumps. When cotton is held close to the licker-in, it is combed better and the fiber is improved; it then passes the mote knives for the purpose of cutting off any seed and motes that may be on the licker-in teeth. The setting of these knives is very important, as they regulate the amount of trash thrown out underneath.

Knives are connected with the licker-in under the casing which the cotton next passes. If this casing is set too close, it will not throw the fibers as it is intended to do, and if too far away, it will allow the good cotton to fall out. The cotton is then delivered to the cylinder well opened up and freed from most of the dirt and trash.

RELATION OF THE OVERSEER TO HIS HELP.

BY S. G. H.

The management of help is a very serious problem, and has become one of the prime factors in successful mill business. A great many men have had experience in fixing, and are capable in that line, but have no managing ability about them, and they therefore make a complete failure as overseers. When a man is promoted to the position of overseer he should assume control at once and treat the help as though he had held the position for all time. Managing help is like practicing medicine; when a man first starts he finds it best to go away from home and among strange people. Having been promoted at home and placed as overseer over those whom he has associated with as operatives, he finds them to be more sociable and harder to control.

To manage help an overseer should permit his help to think he is one of them, and hasn't what is called the "big head." The overseer should be the first person in the room in the morning so that he can see that his help are all in at the proper time, and at their places at starting time. When one comes in sick or wanting to get off for the day he should endeavor to excuse him if possible, thereby showing them he has their welfare at heart. He should visit their homes when convenient and see that they have good and comfortable surroundings.

Try to induce them to make gardens and have nice flower yards, as this is one of the great essentials in contenting help, for no family likes to move and leave a nice garden or yard. When a pump or bucket at the well is broken and reported to the superintendent he should be

prompt in having it replaced. He should always be ready to correct any mistakes that might be made in keeping their time, showing them that honesty is the best policy. Should they by accident break any part of their machines, or break out window panes, the overseer should never go to them in a temper, but he should ask them to explain; then judge their case impartially.

Throwing bobbins and waste on the floor is generally the result of bad and careless management. The results of poor management can be seen in any room where you find spools, bobbins, paper or anything that is easily thrown aside, piled in boxes or in corners or on tables. No one knows where it comes from or what it is. A poorly managed room is one managed by a person using profane language. Cleanliness should be practiced in all rooms. A clean person is almost always a good hand.

No overseer should engage in any work that interferes with his duties at the mill. No overseer can manage other people's business and himself be engaged in business and make success for both. Overseers should not get in the habit of going out for their breakfasts or permit those under them to do so. He should be the last man out of his room at night.

SOCIAL LIFE OF THE MILL.

BY J. P. B.

I think as a rule that cotton mill people enjoy themselves, socially, as much as any working class of people can, who do not have any more time for social gatherings than they do. There isn't much time for meeting together, yet they are together when at work, and can plan for little social gatherings, which are enjoyed very much. I think all mills should provide some innocent amusements for the young people when they can, for it might be the means of saving many good boys, and girls, too, from going astray. What I mean by some place of amusement is a library and reading room, and also a place where they can play innocent games and be brought together to enjoy themselves when they leave their work. But I do not think they should have anything that would interfere with the church and Sunday-school, for good churches and Sunday-schools are the very life of a mill town, and everything should be done for the uplifting of the churches. The church brings the people in closer touch with each other than almost anything else.

I think that every superintendent should mix with his people and make them feel that he is one of them, and encourage them in all social gatherings that are clean. A superintendent should not hold himself above his help just because he has employed them, for if it were not for the help, what could he do? The superintendent's wife should be sociable toward the people and mingle with them as much as she can; and above all she should visit the sick and see that none suffer for anything. There is no need for mill people to get the impression that other people think they are better than mill workers, for if the latter will just hold up their heads and determine to be somebody, they seldom fail.

POINTS ON CARDS.

BY R. H. S.

The card is largely responsible for the quantity and quality of the production that a mill turns off, and it should have particular care. First, it should be kept level to prevent any friction caused by the cylinder rubbing the arch and accumulating heat, as this will cause the wire to get hot and expand and ruin the temper in the wire, and also waste power. Next, the card should be kept clean and free from waste oils, as the oil will find its way to the fillet and will cause the wire to become loose and get spongy. The card should be properly oiled once daily by a careful man who will see that every part is oiled to prevent any of the bearings from wearing. It is impossible to set a card to do good work which has any of its bearings worn to any extent. Next, the card cylinder and doffer should be well ground every thirty days and set to suit the work that it is required to do. The setting depends on the amount of stock that is going through the card. The following settings will suit for heavy carding: Feed plate, use No. 12 gauge; mote knife, top No. 12; mote knife, bottom No. 17; lickerin to cylinder No. 7; flats at back No. 11; and then in front to No. 9; doffer to cylinder No. 7; cylinder screen at back No. 24, tipped in front to one-eighth inch front; draft plate No. 15; doffer comb No. 10.

Next, the card should be well stripped three times per day. If it is allowed to run too long without stripping, the teeth will become filled with foreign impurities and the results will be cloudy carding and injured wire by rubbing the top flat, as the teeth will be pressed back to some extent and make the setting much closer than it was when the wire is clean. This will also cause the teeth to work loose in the fillet.

The lickerin requires a great deal of care. The lickerin and its screen should be kept properly set, as an improper setting will cause more bad work than any other part of the card. If it is set too close to the feed plate, it will break the fibers and make unnecessary waste; if it is too far off it will allow the lickerin to take the cotton in flakes which will cause cloudy carding. It will also require the cylinder to do the work of the lickerin, and by so doing will injure the wire on the cylinder. Again, if the lickerin is set too far from the cylinder it will carry some of the fibers past the cylinder back over itself, which will be thrown out in fly waste. If the lickerin screen is set too far from the cylinder, good stock will be blown back under the lickerin and its screen.

The flats should be set more open at the back, as the back ends of the flats have more work to do than the front, because the stock has just passed from the lickerin and is not carded at all. As the stock advances it will get closer to the cylinder, and the front ends of the flats being closer will cause the fibers to be carded as they pass each flat. The front draft plate should be set according to the amount of strips desired; the farther off it is the more strips will be

NEW MACHINERY AND TRADE NOTES

A NEW HIGH SPEED SPINNING RING.

As commonly understood, a spinning ring consists of a hardened and polished steel ring with inner and outer flanges on which a steel traveler runs. For all ordinary spinning, the ring in use to-day is double, that is, the ring is held in the holder by the outer flange of one side and when the other or used side is worn out the ring is turned

FIG. 1. HIGH SPEED SPINNING RING ASSEMBLED.

over and reset, and the spindle readjusted to the center of the ring.

A new ring, which is called the High Speed Ring, is not a ring in that definition which makes the ring a vehicle for the traveler, but is properly two circular and specially formed parts designed to hold and support a specially designed circular traveler which is concentric with the ring. The parts are of stamped sheet steel and are snap-locked to a centering plate placed on the frame. Between the circular traveler and ring is held a lubricated bearing for the traveler.

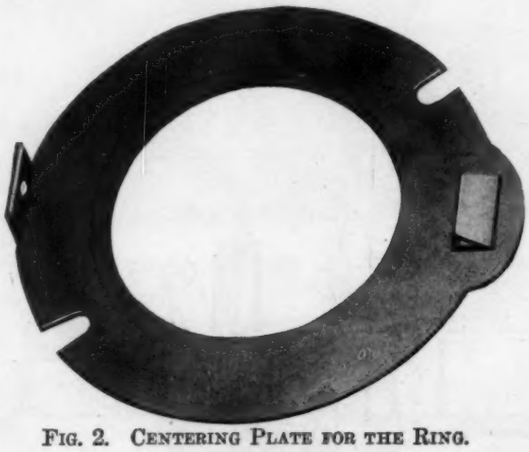


FIG. 2. CENTERING PLATE FOR THE RING.

Fig. 1 shows the ring complete with the centering plate and traveler. The only portion shown of the traveler is the bent or hook end through which the yarn runs. Fig. 2 shows the centering plate with two notches cut in it to fit the screws in the ring rail. This plate is cut out for a two-inch ring, and when once centered with the spindle does not have to be reset in case any smaller sized ring is used on the frame. If the two-inch ring is taken out and another put into the same snap-lock, it is centered as truly as the ring taken out. Fig. 3 shows the lower section of the ring on the upper circumference or edge of which the circular traveler runs or rests. This section is snap-locked to the centering plate in the vertical ear shown turned up at the left hand side. Between this vertical portion and the upper section shown in Fig. 5 is the lubricated bearing for the outer edge and top of the traveler.

Fig. 4 shows the traveler, which is a circular or annular disc of steel with an inside diameter equal to the size of the ring. The part of the traveler through which the yarn runs is a part of the same piece of metal as the disc, but turned up to project above the top of the upper section of the ring, and the end bent out and down to form the loop or hook through which the yarn runs. Fig. 5 is the upper section

FIG. 3. LOWER SECTION OF THE RING.

which holds the lubricated bearing for the traveler and which is snap-locked to the lower section by the ear shown at the left. A portion of this section is cut away to show the relative positions of the lubricated bearing and the section proper. The traveler runs between the under side of that part of the bearing which projects toward the center and the top of the lower section (Fig. 3). In other words, the top section fits over the lower section like a cap, with the traveler between them.

No traveler clearer is required, and no oiling. No electricity is generated by the contact of the traveler with the ring. The yarn is drawn through the traveler at the inside diameter of the ring. This reduction of diameter in the swell of the yarn and the lack of electricity generated by the traveler reduces the ballooning of the yarn, which causes it

FIG. 4. CIRCULAR TRAVELER, USED WITH THE RING.

to run more evenly and with less breakage. After long continued use at speeds much above the usual speeds of modern spindles (say, 9,000 revolutions per minute), the traveler and bearings in this high speed ring show no signs of wear, and there is no breakage of travelers.

At the recent textile exhibition in Boston, Mass., a frame containing high speed rings was run continuously with a

FIG. 5. UPPER SECTION OF THE RING.

spindle speed above 12,000 revolutions per minute and for a time with no difficulty at 14,000 revolutions per minute. Frank L. Roberts, 53 Devonshire Street, Boston, Mass., representing the High Speed Ring Co., will be glad to give further information.

The principal advantage claimed by the ARABOL MFG. Co., 100 William St., New York City, for their latest product, called Bellicosa Softener, are economy and easy handling. Bleachers who want to use it do not need to dissolve more material than is actually required for each batch of size. Two and one-half pounds dissolved in 3 gallons of hot water are said to equal 25 pounds of ordinary finishing paste.

A NEW DYEING MACHINE.

A new dyeing machine adapted to all textile fibres and for any of the various groups of dyes has recently been patented. The machine is the invention of Jan Tadeusz Psarski, and is built by The Beckman Co., Cleveland, Ohio. The machine is so constructed as to be useful for all kinds of material, such as cotton and wool, raw stock, skeins, cops, cones and rags, and is available for stripping, chrome-mordanting and dyeing with any class of colors. That the method of dyeing with this apparatus and the treatment of the stock to be dyed may be thoroughly understood, the following description of its construction is given:

The dye kettle proper is made of heavy pine, and cylindrical in shape, being securely bolted to a heavy cast iron top and bottom. Fitting into this kettle is an iron of copper false bottom, constructed with a central cone-shaped portion, supplied with a number of perforations, so as to permit thorough distribution of the dye liquor. A removable cover, also of iron or copper, and supplied with few and very small perforations near the periphery, fits closely to the inside of the kettle, and is securely held in position by a central spindle, which serves as a bolt, and side clamps to hold the false bottom and cover together.

A rotary pump is attached to the kettle, and by suitable pipes and valves the dye liquor is made to circulate through the mass of material to be dyed; and when dyeing is completed, to force the spent dye liquor back into the stock tank to be replenished. The pump also serves to force the rinsing water through the machine. To commence dyeing, the false bottom is lowered into its place and the material to be dyed carefully packed around the central perforated cone or distributor, after which the cover is placed in position and tightly clamped down. The dye solution is then allowed to flow in from the dye tank, the pump is put in motion, and the circulation continued until dyeing is completed.

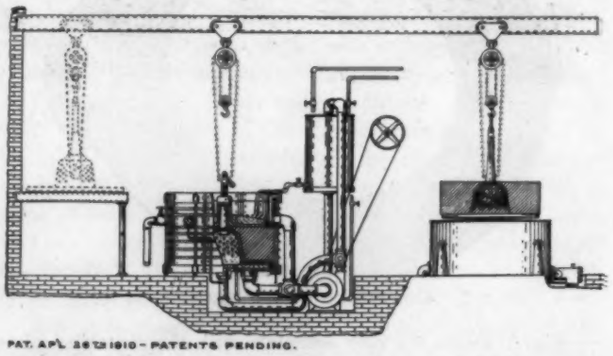
Temperatures are maintained or regulated by means of a closed steam coil in the machine, in the space immediately under the false bottom.

After dyeing, the dye liquor is withdrawn by the pump and forced into the stock tank, and the water is circulated and continued until washing is completed, after which the chemical solutions are circulated as in the case of diazotizing, developing, etc. When the final washing is completed the cover is removed, and by means of an overhead block and chain the false bottom is removed, carrying the dyed material, the whole being lowered into a whizzer.

One of the advantages noticed in this machine is the very small volume of dye liquor in use, there being but 250 gallons of liquor for 500 pounds of material to be dyed, or in the proportion of 1 to 4.15 by weight. Owing to this small volume the circulation is very rapid, the entire quantity being circulated about twice per minute.

One of the important points noticed in making dyeings with this machine is the automatic prevention of channels in the stock during the dyeing, and which is due to the constant upward and outward flow and pressure of the dye liquor. The pressure of the dye liquor may be as high as 25 pounds a square inch, and where so high a pressure is secured there seems to be no possibility of channels and consequently no uneven shades.

The machine would seem to be very economical, the small volume of dye liquor requiring but a small quantity of steam to maintain it at the boiling temperature. One laborer only is required to handle 2,000 pounds of cotton a day. The stock to be dyed not being handled after the machine is closed, no impairment of the fiber can occur. Small



VIEW OF PSARSKIE DYEING MACHINE.

floor space is taken up, a machine of 500 pounds capacity requiring less than 50 square feet—exactly 6 1-2 by 7 1-2.

As a time saver, the following abstract of records of actual dyeings has been made, and a perusal of them will prove of interest:

Oily rags—strippings, chroming and dyeing 500 pounds.

Scouring with alkali	10 minutes
Washing out	30 "
Stripping with Hyraldite	15 "
Rinsing	30 "
Chroming	1 hour 15 "
Dyeing	1 " 0 "
Rinsing	5 "
	3 hours 45 minutes

Cotton yarn—dyed with direct colors 500 pounds.

Bringing to boil	10 minutes
Boiling	15 "
Running without steam	15 "
Washing	3 "
	43 minutes

Cotton yarn—dyed with sulphur colors (heavy shade) 500 pounds.

Bringing to boil	10 minutes
Boiling	15 "
Running without steam	20 "
Pumping dye liquor back to stock tank	5 "
Washing	20 "
	1 hour 10 minutes

Wool—dyed with alizarine colors.

For chroming	1 hour 15 minutes
Washing after chroming	10 "
Bringing to boil	30 "
Boiling	30 minutes
Washing	3 "
	2 hours 28 minutes

BOSTON EXHIBIT OF THE DRAPER CO.

Draper Co., Hopedale, Mass., in its May issue of "Cotton Chats" gives two excellent illustrations of its exhibit at the Textile Exhibitors' Association in Boston during the last week in April. We reproduce one of these illustrations, which is a view of the exhibit taken from the front aisle. The exhibit was one of the largest in the Hall, and required four spaces for the display. Four Northrop looms were in operation, producing different styles of cloth. The L Model 90-inch broad sheeting loom was producing 68x72 cloth to be used for sheets. There were three Model E looms producing fabrics as follows: One was weaving pillow tubing, making a circular fabric without a seam, using 28s warp and 36s filling; another loom was producing an 88x92 lawn, using 80s warp and 120s cop filling; another was running on 5 harness sateen, regular 64x124, using 28s warp and 36s filling.

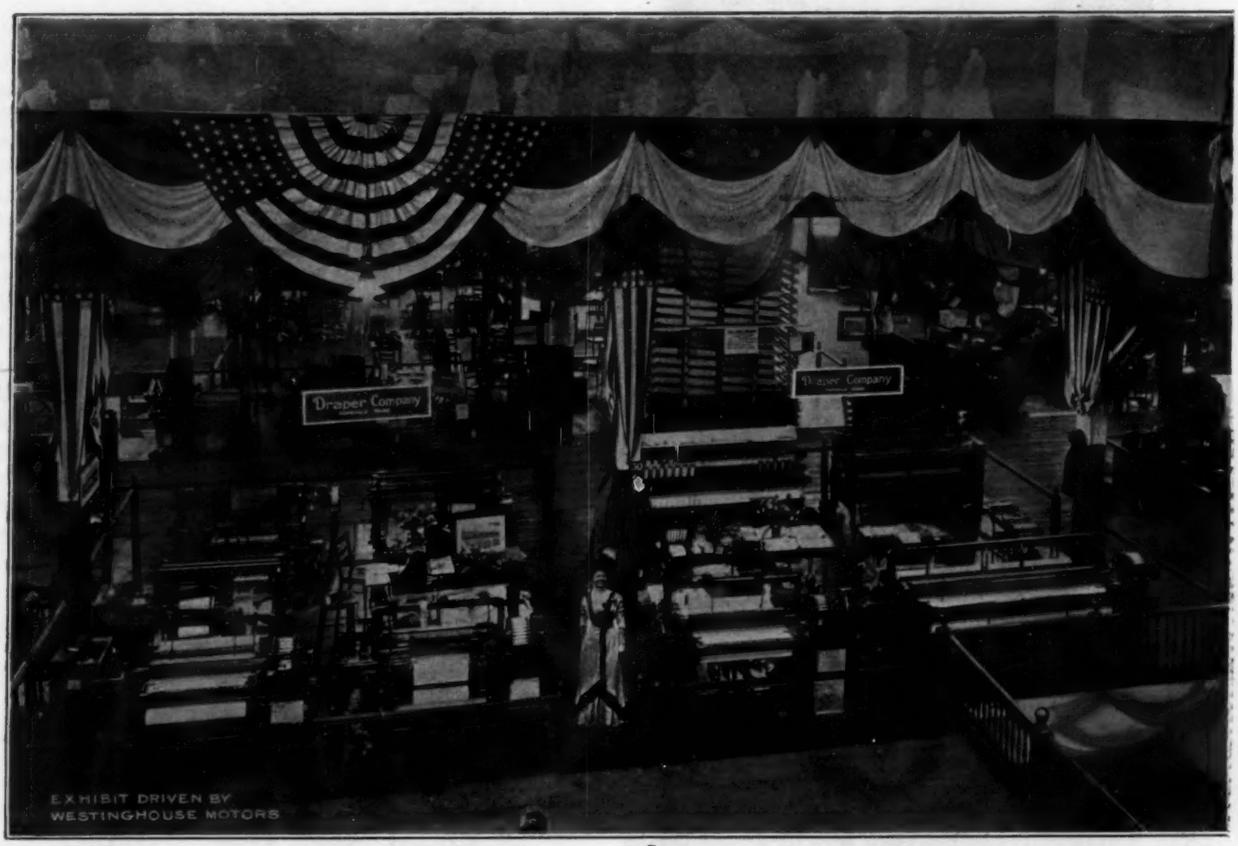


EXHIBIT OF DRAPER CO., HOPEDALE, MASS., AT TEXTILE EXHIBITORS' ASSOCIATION, BOSTON, MASS.

Draper warpers, Models F, G, & I, were also shown, the Model F on fine work, G with the balling machine attachment, and Model I, having a large extra beam. Besides these there were the Model I spooler and a twister of special construction, showing wet twisting on one side and dry twisting on the other. The automatic yarn tester for testing single yarns and recording the results automatically on a chart was exhibited. The machine records the break-

ing strength of yarn in ounces by an automatic arrangement. The well known MacColl spooler guide was included among the accessories shown. The device removes slubs or bunches, but allows small piecings to pass through.

THE LOGEMANN IMPROVED BALING PRESS.

The toggle or lever system for obtaining compression in baling presses has been in use a number of years, but few manufacturers have given this method proper thought and study, to obtain greatest compression with the least power. With the constant increase in cost in shipping cases, and the time and space required to handle them, the value of a baling press has become more apparant to the

THE LOGEMANN IMPROVED BALING PRESS.

manufacturer and shipper in textile industries. Many such presses have been installed without considering the cost of operation, but to-day nearly every intending purchaser realizes that a machine must be built with the idea of reducing the cost of operating expenses.

The feature of the baling press here illustrated lies in the fact that the main screw is stationary, and does not travel with the plattens. Rollers are attached to the toggles and nuts, which travel on steel beams, thereby carrying the burden of compression, and not only insuring long life, but greatly reducing the power required to obtain the compression. Actual tests show according to the makers that over 70 per cent. of power has been saved with this system. The difficulties as well as excess power used in the knuckle joint system with movable screw and chain drive are entirely overcome with this system. The belt shifters are connected with the pulleys direct. All materials to be compressed naturally require comparatively little power when first the pressure mechanism is started ,and the more material is compressed, the more power required. The inventors of the press here illustrated, are able to obtain the heaviest compression with very little increase in power.

To illustrate the effect of this device, when the upper platten is in it's highest position, and the pressure mechanism started, one revolution of the pulley will drive the platten downwardly 2 inches. As the gears continue to revolve, the speed with which the platten travels decreases, so that the fifth revolution will lower the platten a distance of only one inch. By the time the platten has reached its lowest position the distance of travel has been reduced to perhaps ⅛ inch for one revolution of the driving pulley, the speed of the pulley, however, having been the same throughout the entire operation. The lever press has met with great favor on account of the reduced cost of installation. The manufacturers, Logemann Brothers Co., Milwaukee, Wiss., manufacture a very complete line of baling presses, and are equally advanced in hydraulics, their hydraulic pumps containing many improved devices. Detailed information will be given upon request, by the home office of the company.

THE DURANT LINEAL MEASURE COUNTING MACHINE.

A new measuring machine for textile goods has just been placed on the market by the W. N. Durant Co., Milwaukee, Wis., who are well known as pioneers in the manufacture of automatic counters. This device consists of a very simple full-geared revolution counter with a measuring wheel of one foot or yard in circumference mounted on the driving shaft, all being supported by a pivoted bracket with sufficient leverage to hold the wheel firmly on the goods and prevent slipping. The measuring wheel can be placed at either end of the counter, and the bracket adjusted to practically any position so that it can be very readily set up wherever a measurement is needed. To count the shaft revolutions only, the counter alone can be used, its driving spindle being easy to connect to the end of any machine shaft. These devices contain absolutely no springs, and are reversible so that errors can be corrected. They can, however, be furnished non-reversible if desired.

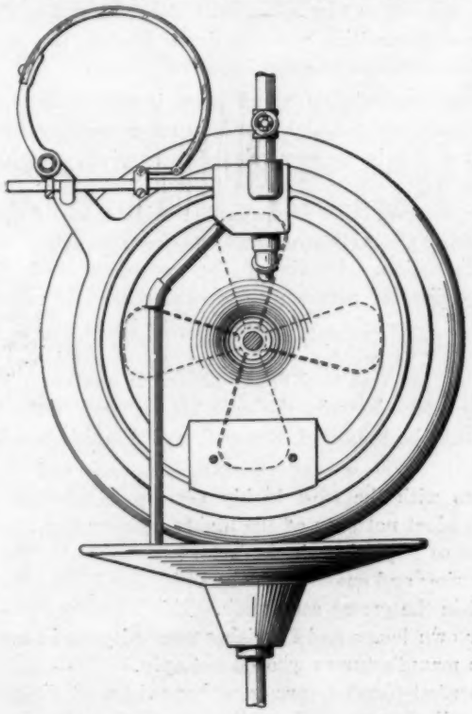
DURANT COUNTER.

These new counters, which are known as "Durant Model B," are also made with a reciprocating lever, star wheel, etc. Any style can be furnished, either non-resetting or resetting with lock so that no one but the holder of the key can turn them back; with simple resetting device, or with instantaneous reset, no key being required. In fact, the manufacturers have developed so broad a line of counting devices in the 33 years they have been in this single line of business that they are able to fill the most exacting requirements with machines of excellent design and thoroughly mechanical construction.

AN AUTOMATIC HUMIDITY CONTROL.

The average carder, spinner or weaver, having accepted the idea that humidification is a good thing, is apt to think that he can not have too much moist air in his room, and he sometimes runs his humidifiers when he had better not, for too much humidity is as bad as too little. This state of affairs calls for the automatic control of moisture supplied, and to meet this demand, John W. Fries, Winston-Salem, N. C., has devised and has a patent pending on an attachment to his well-known Hygrosso humidifier, which it is said has the merits of efficiency, simplicity and moderate cost.

The accompanying illustration shows the motor-driven Hygrosso with the automatic regulator attached on the upper part of the frame. This device was on exhibition in Charlotte, N. C., during the convention of the American Cotton Manufacturers' Association and created considerable interest. The small well of the humidifier shown contains an inclined nozzle which communicates with the water supply pipe. The lower part of this well is provided with an elongated tubular opening adapted to receive the water from the nozzle when not otherwise prevented. The water



FRIES' AUTOMATIC CONTROL HYGROSSO.

received in the tubular opening flows downwardly into the pipe which delivers the water to the humidifier. The tubular opening in the bottom of the well is of less width than the well, so as to form a space which receives the stream of water from the nozzle if the valve be opened too much. This prevents any possibility of supplying too much water to the humidifier and causing what is generally termed "wetting down." Any water passing from the nozzle which does not find its way into the tubular opening is received in the well and carried off by the overflow pipe.

A reciprocating bar is provided to the end of which a water-diverting head is attached and adapted to be moved to contact with the stream of water issuing from the nozzle in the small well whenever it is desired to divert the water from falling into the tubular opening. This device will thus reduce or cut off entirely the water supply to the humidifier, and the instrument may be set so that this will take place when the relative humidity is at the desired point. This diverting head and bar is restricted in its movement by an adjustable stop. This adjustment is made so that the head may move in front of the stream of water just sufficient to divert it.

The reciprocating bar is moved by means of the expansion and contraction of a curved portion which is connected to the reciprocating bar by means of a lever. This curved portion is of compound construction having an outer band of brass and an innner curved part of wood. Wood parts are sawed with the grain running substantially at right angles to the outer edge of the strip, which makes the device very sensitive.

The expansion and contraction of the curved portion is effected entirely by changes in the hygrometric condition of the atmosphere, so that the instrument may be set to have the reciprocating bar divert water supplied to the humidifier at any percentage of relative humidity desired. When once set, it requires no further attention, and is remarkably accurate and sensitive, regulating the water supply to the humidifier in response to the slightest hygrometric changes.

The Hygrosso is the only humidifier with automatic control where each head is a complete unit and can be adjusted to control the humidity in its own 20,000 or 25,000 cubic ft. of air space. It matters not how many Hygrosso humidifiers there may be in a room, they can be set so the humidity will be uniform throughout the room or different parts of the room may be independently controlled. John W. Fries, 88 Center St., New York City, has some very interesting literature on the subject that will be sent upon request.

PIONEER LATCH NEEDLE MANUFACTURERS.

One of the earliest latch needle manufacturers in the United States was George H. Adams, Hill, N. H., who took over a business established by two young men in 1869. The patented improvements of Mr. Adams not only added much to the life of the latch needle, but made possible the production of better and a larger amount of work. One of his most valuable inventions was the countersunk rivet, which proved to be the chief feature of construction in preventing the loop of yarn from catching on the rivet head.

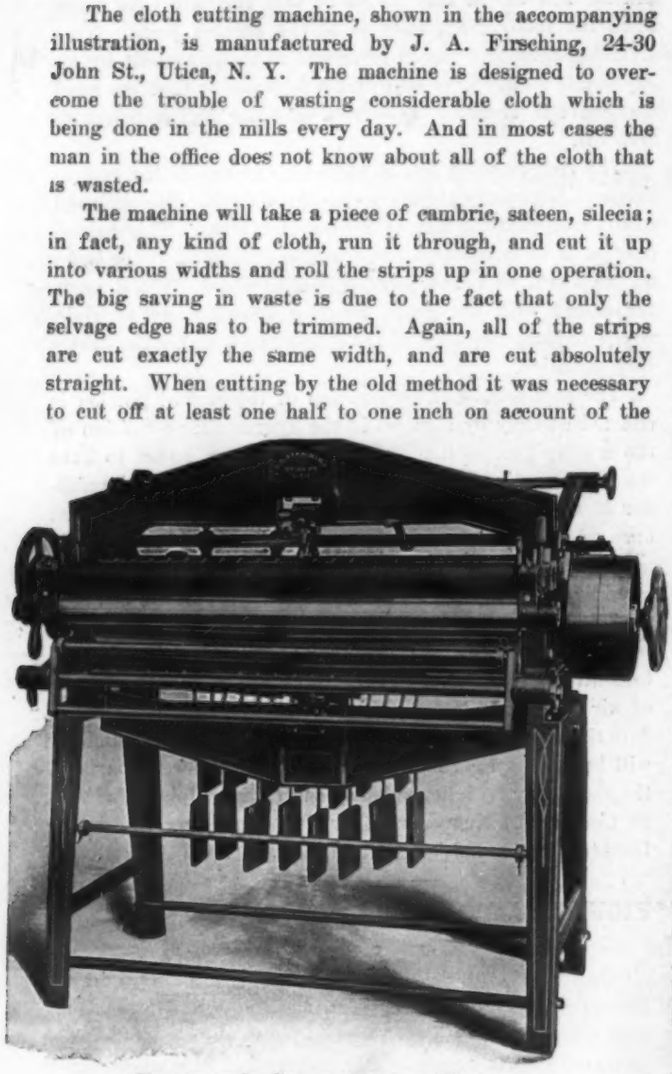
It will be readily understood that this construction is of value whether the yarns used are cotton, woolen or silk. The increasing demand for fine gauge needles in proportion to the demand for heavier needles shows, perhaps, as well as anything else how they are appreciated by prosperous knitters. The Geo. H. Adams Co. has been recently reorganized with R. B. Griffin Pres., M. J. Nevins Treas., and Jean M. Shaw Vice-Pres. and Sec. The factory is being enlarged and their facilities improved to care for the rapidly increasing business. Mr. Shaw has been connected with the concern for eighteen years and in that time has worked out the salvation of many manufacturers of knit goods by making special needles to meet the necessities arising in special fabrics.

Exports of cotton goods for the month of March amounted to 15, 797,636 yards, valued at $1,136,419, as against 35,524,035 yards, valued at $2,069,770 for the corresponding month in 1909.

FIRSCHING'S CLOTH CUTTING MACHINE.

The cloth cutting machine, shown in the accompanying illustration, is manufactured by J. A. Firsching, 24-30 John St., Utica, N. Y. The machine is designed to overcome the trouble of wasting considerable cloth which is being done in the mills every day. And in most cases the man in the office does not know about all of the cloth that is wasted.

The machine will take a piece of cambric, sateen, silecia; in fact, any kind of cloth, run it through, and cut it up into various widths and roll the strips up in one operation. The big saving in waste is due to the fact that only the selvage edge has to be trimmed. Again, all of the strips are cut exactly the same width, and are cut absolutely straight. When cutting by the old method it was necessary to cut off at least one half to one inch on account of the



FIRSCHING'S CLOTH CUTTING MACHINE.

cloth not being laid up straight. For that reason is was necessary to turn in one-quarter of an inch on the side in order to overcome the conditions of the cloth as it came from the cutter.

Again in running the cloth through the folding machine very often it turns the edge on one side and not on the other. Furthermore, there is a lot of waste made when the button stays and facings are going through the mill, on account of their not being turned in on both sides; and the reason for this is because the cloth is not cut straight. Where this cutting machine is used it overcomes all of that trouble, and, on account of its accuracy in cutting it is not necessary to turn in a quarter of an inch. By cutting the strips narrower and saving the waste on each end, it will get more strips out of a piece of cloth than is possible by cutting it the old way. In some cases where the embossing machine had been installed for turning the edges it was found that the manufacturer could get along with turning in one-eighth of an inch instead of one-quarter of an inch as was the case with the old way. Take for an example; cutting a button stay and facing two inches wide you can not get any more than 17 strips out of the cloth by the old method, but by using the cloth cutting machine and the so-called embossing machine, the manufacturer can cut 19 strips out of the same piece of cloth. When the amount of cloth is figured out that would be saved on a piece 60 yards long, it will be found that fifteen dozen more shirts can be finished than by the old way, taking for a base that the button stay and facing would be 12 inches long. The advantage to any manufacturer is readily seen and also what the saving will amount to in the course of a year.

THE ARLINGTON MILLS.

The Arlington Mills, of Lawrence Mass., beginning in 1805 the manufacture of worsted dress goods, found it difficult to overcome the predjudice against American made goods and particularly difficult to equal the quality of the imported goods, because so few men understood the manufacture of worsted goods at that time. By persistently employing the best help that could be obtained including designers, dyers, spinners, and weavers, the product of the Arlington Mills gradually began to equal any like goods made elsewhere, so that today with facilities, materials and employees unexcelled, worsted dress fabrics for womens' and children's wear have no superior.

Having reached this proud place in the trade their efforts to maintain the high standing after nearly fifty years of progress are in no way relaxed but rather intensified by a system which not only keeps in touch with new fashions and designs from other countries but originates and develops thus making the Arlington products unsurpassed in demand and satisfaction. Obtaining the necessary stock for so great a variety of products requires purchases in every wool market in the world. Alpaca from the llama of the mountains of Peru; mohair from the goats of Asiatic Turkey, Australian, African and South American merino and crossbred wools together with the same kinds grown in the United States and the beautiful wools of pure English blood.

Nearly 8,000 operatives using unusual and superior processes with the most highly developed machinery turn out a product not only of the highest quality but in volume in excess of any other single factory in the world. The plant for scouring and combing wool will handle 1,200,000 pounds of wool in the grease each week. This supplies the demand of their own looms and furnishes worsted yarn in every variety to manufacturers who do not spin.

A perfect worsted yarn is perhaps the most difficult product in all the range of textile manufacture, requiring not only intricate machinery and exact atmospheric conditions, but the most highly developed skill in employees. Arlington worsted yarn has a standard of its own, and the variety of style, color and size include the following:

English System.

Single gray warp and dresser spools, bobbins, quills, tubes or cones.

Ply gray warp and filling in skeins on dresser spools or spools.

Single slub dyed fancy, black and gray, black and bleached.

White mixtures and jaspers.

Ply slab dyed, the same as single, also double and twist.

Single knitting, gray, black and gray, black and bleached.

Mixtures, Astrachan and Boucle.